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For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE Journal of Home Economics

VOL. XIV

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No. 1

THE HOME ECONOMICS TEACHER AND COMMUNITY INTEREST IN NUTRITION

MARY G. MC CORMICK

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Most organizations that are engaged in promoting child welfare are adopting a nutrition program. When their various plans are ultimately in full articulation, care for the nutrition of the child will begin with the pre-natal period, continue during infancy and the pre-school age, and extend throughout his school life. Beginnings have already been made. For some time the infant welfare stations have been caring for the pre-natal period and the period of infancy; as yet little has been done in an organized way for the pre-school age. The marked attention which has been given to the school children may be partially traced to the fact that the school organization makes the school children accessible in groups.

While a nutrition program for school children is a matter to be undertaken by school administrators, its claims and importance are not yet recognized by all school officials. Suggestions that such a program be introduced are received in varying ways according to the temperament of the superintendents, the responsiveness of the board of education, or the sentiment of the community. Some superintendents have recommended to their boards of education that an appropriation to employ a nutrition specialist be made; the boards have approved, but the item in the budget was eliminated by the board of estimate, because there was not enough public sentiment to demand it. Other superintendents who are enthusiastic about nutrition work are fettered by boards of education that share none of this enthusiasm. Some superintendents, fortunately

few in number, are uninterested and very complacent, because, forsooth, their school children are well nourished! When sufficient publicity has been given to the need for nutrition work and when the people are willing to give financial support to the school authorities who are trying to promote it, its introduction into the schools and its development there will be rapid.

Most superintendents are willing and able to take the first steps, one of which is the equipment of their schools with scales. Of the 59 cities in New York State, for instance, only 4 have no scales in the schools. Of the 58 villages in the state only 9 have no scales in the schools. In some parts of the state, scales in the rural schools are found in surprising numbers. In Erie County the Red Cross has helped to equip 131 rural schools with scales. In Broome, Chenango, and Sullivan Counties the Red Cross has taken a similar step.

Most superintendents find it possible to take the second step, that is the introduction of the milk feeding for the children found to be undernourished. This practice has grown rapidly in New York State: it has been introduced already in 40 cities and 28 villages. The children who are able to pay for the milk are expected to do so. For the children who need the milk and cannot afford to buy it, funds are usually furnished by such organizations as the Parent-Teacher Associations and the Mothers' Clubs. We have recommended that the undernourished children in the rural schools be urged to bring from home an extra quantity of milk and that they be given an opportunity to take it in the mid-morning and mid-afternoon.

There is another step which our school officials will take if there is an apparent need for it in their schools and if it may be taken without much expense. This is the noon lunch. In many cities and villages there is a considerable number of boys and girls who live on the farms and drive back and forth each day to attend high school. They carry a lunch box and at noon eat its cold contents. If the community is an industrial center where the local mothers are at work in factories their children also may be found eating a cold lunch at school. To such boys and girls a hot nutritious dish sold at school at cost would be a very great advantage. In many localities the home economics class is meeting this need. The home economics teachers say that when they have an opportunity to make this project an integral part of their program they welcome it, for it gives the girls an opportunity to cook in large quantity. In the rural schools, where the teachers are urged to introduce one simple hot dish at noon to supplement the children's box

lunches, both students and teacher enjoy a quiet social lunch hour during which many lessons in food selection and good eating habits may be incidentally taught. The rural hot lunch has been extensively adopted by the rural teachers of this state. They maintain that when properly organized it does not encroach on their noon hour and that the children do much better school work in the afternoon. The superintendents in the rural sections have given much encouragement to this activity. The Home Bureau Agents because of their friendly and intimate relations with the rural women have made it possible to create community interest in it. In order to train our future rural teachers we have asked the home economics teachers to give a series of ten lessons and demonstrations on the rural hot lunch before the members of the teachers' training classes.

To almost every school official the need for these various health activities has seemed obvious: because they could be incorporated into the program without increasing the school budget they have been readily undertaken. Monthly weighing of the children, mid-morning feeding of milk for the undernourished children, and noon lunches, however, will not necessarily correct malnutrition. Moreover the undernourished children as a group represent only about twenty per cent of our school population. A really complete nutrition program should include in its scope plans for improving the nutritional conditions of all school children. Ideally there ought to be a supervisor of nutrition on our school faculties, one who has made a special study of the nutritional conditions of school children and who, together with the school medical inspector, the school nurse, the oral hygienist and other specialists, would constitute a department of health education. Our most progressive schools are organizing such a department.

In the meantime, plans must be formulated to awaken those localities that are not yet interested in nutrition work. Efforts that bring the most rapid returns in community interest are those spent on the undernourished child. It will hardly be necessary in most places to convince the public that there are undernourished children in their schools: the abundance of newspaper space given to the undernourished child in the last few years has informed most people that he is ubiquitous. It is necessary however to demonstrate that his condition is remedial, and the most effective kind of demonstration is a nutrition class. A number of undernourished children are selected for the demonstration; on the day of the weekly meeting each child is weighed and a weight curve is drawn for him on his own chart. The children are told what they must do in

order to gain, and a competitive interest is aroused among them. Each week the children who gain are placed at one end of the class and those who do not gain at the other end. The children who gain are praised for their achievement; the one who gains the most receives a gold star on his chart; the others who have gained receive a red or blue star. When there is a failure to increase in weight an attempt is made to find the cause. Those children make the most satisfactory progress who are "free to gain," that is those children who are not handicapped by physical defects. Consequently each child in a nutrition class should have had a thorough examination by a competent physician and his defects should be corrected as far as possible. As the cooperation of the parents is most essential they should be urged to attend the weekly meeting of the nutrition class. A nutrition class when successfully conducted not only impresses the parents and the community at large; it obtains the cooperation of the teachers without whose interest no nutrition work in the schools may be easily accomplished.

Who should conduct this demonstration? Obviously the ones best fitted by training. The New York Nutrition Council last winter formulated certain standards of training for nutrition workers. A perusal of these standards indicates that the home economics teacher, if she is a graduate of a good school, has included in her training more of these subjects than any other person on the school staff. Especially has she a knowledge of food values and the physiological factors that underlie good nutrition. Her deficiencies lie in her inexperience in working with the physician and in her lack of any training that would give her a medical viewpoint. The school nurse has had insufficient training in the chemistry of food and the principles of nutrition; her familiarity with medical procedure and her hospital experience with children, however, are assets that should not be overlooked. Moreover if she has had contact with social agencies she is still more valuable. The separate training which the home economics teacher and the school nurse have received therefore, will, when united, constitute an effective machinery, and jointly they may conduct a nutrition class. The home economics teacher assumes the responsibility for the instruction in foods and for the correction of the dietary errors of the undernourished children; the school nurse, familiar with the physical defects, which the physician in his examination has discovered, aims to have these defects corrected. The nurse also explains to the child the desirability of cleanliness, of adequate sleep, and of play in the open air.

Such a nutrition class may have immeasurable influence: the parents develop a greater concern for the nutrition of all children; the teachers bring a new vigor and purpose into their lessons on health. The educational value of the school lunch as well as its nutritive properties are revealed. There is a demand for additional nutrition classes; in fact the home economics teacher who is interested and competent is in a position to portray the need for a full time nutrition specialist on the staff. Undoubtedly she is the one who will be chosen for the task.

ACHIEVEMENTS OF HOME ECONOMICS¹

ABBY L. MARLATT

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In discussing the possible scope of this review a friend said, "One of the greatest achievements has been in the change of vocabulary." To change the vocabulary of our people takes long and persistent effort. Perhaps today we talk too much in chemical terms, neglecting the basic economic principles which should be emphasized. It may be that we are biased in our emphasis on vocabulary. We dwell too much on the need of making things. This is the least important of our problems. It is a question of choice rather than of making; we are getting away from the training in construction, and emphasizing more the training of judgment in choice of what is appropriate in its use. This training in judgment is beginning to be an essential factor in all discussions in regard to woman's education. Woman has ceased to be called a non-producer. When she spends the family income so that \$1 counts for \$3, she is recognized as a producer of potential wealth. Our vocabulary today is being modified to include this thought. We can trace this to the teaching in the beginning of the selected few, until now, in popular writings, there has come about a choice of terms, and a better understanding of the professional value of woman's work in the home.

Shelter. We may have to give up the single houses which we believed were the ideal homes in the past. We have not yet reached a point where

¹Extracts from an address delivered at the Recognition Service in honor of Miss Bevier at the University of Illinois.

a man's home is not his castle, but if housing conditions do not improve we may be forced to transform into a boarding house our free rooms for those who have them not. The discussion of the housing budget involves questions of health and economic expenditure—how to make that which we can secure in the way of apartments adapt itself to the needs of the family while still maintaining the health of the family.

Food. When it comes to food, today our vocabulary is full of words which we repeat glibly. The newer vocabulary is becoming the patois of our daily press. What we need to bring into our daily consciousness, yes, into our subconsciousness, is that automatic choice of all the things that we need to build up health. We are facing the situation when all must go to a restaurant or to a cafeteria. It is cheaper to buy a ready prepared meal than it is to hire a maid, at the present expense, and dine at home. The projects in laboratory courses may be quite materially changed. We must teach how to buy, not the raw material only, but the material prepared for immediate service. The cafeteria must develop into the type which caters to the family group by providing alcove dining rooms. It is being tried with success in some of our modern restaurants. The home table is not only disappearing, but has, for many of us, disappeared. We must have some other family center for our training of the child in the manners of the gentle bred.

Throughout the country we have established a demand for a four-year trained dietitian with the interne period of probation similar to that required for the physician. The girl today who elects her major in nutrition must plan for her period of practice in an approved hospital before she can accept a position of trust in planning the diets of patients.

The school feeding clinics have come in very largely through the coöperation of the physician and the trained food woman. In many cities these clinics are organized by a home economics instructor, coöperating with the physician in the health centers. In many of our universities, the senior students are the ones who do the teaching in these feeding clinics. They are also assisting the nurse and the physician in the welfare clinics. We are swinging over to the Chinese point of view—that physicians are paid when the family is well. Prevention is our great problem. It is not a question of medicine so much as the right amount of food, the right type of shelter and the right proportion of rest and sleep.

We have put our resident dietitian in hotels—a graduate of the University of Illinois is a pioneer. In the family hotel, the resident nurse, the resident physician, and the resident dietitian are a triumvirate.

The needs of the people are met through a systematic study of the world supply of food, clothing, and shelter. We must face our issue as a socialized, world-movement project. In early times they laughed at our food laboratory. But we had the nugget of the new educational ideal, which is that the pupil must have in mind the solving of a definite project. We are getting away from the old educational method of teaching separate steps before we are allowed to solve the problem. For general educational purposes we must take the problem as we find it and solve it in the way which will serve best the individual, the family, and the community. Part-time schools under the the Smith-Hughes laws have met, to a large extent, the needs of many girls, and have equipped them to establish their own homes. The home economics extension work under Federal and State effort has swept our entire country. State specialists, who can give to the mature woman the data that she needs to make her problems easy of solution, are being sent out.

During the war the need for conservation was eminent. Mr. Hoover called in the group of people that seemed to him fitted to do the work of teaching us to save so that we could give. There was an appeal to the home economics group to put over the program in their own localities. They carried the message so well that all who need that type of service which calls for the knowledge of how to help meet the needs of the country are now appealing to the home economics trained woman.

In the health movement for the future mother and child, the work in home economics is fundamental. We have come to the point where we can say to the young girl that the most wonderful thing in her power is to choose the inheritance that she will pass on. We must push it so far that the choice of the good, so far as an inheritance is concerned, becomes automatic; that is, so that choice reacts sub-consciously. The eugenic teaching should be of the quality that gives the individual the sense of responsibility. The question of the future mother and the future child should be such that the girls discuss it as one discusses the highest experience in the religious world. In home economics phases of the work it has been so taught. We have been sending through our country people who have specialized in this work. We believe that the home economics people are the ones who should pass it on.

Social welfare work. There is need for close coöperation between the home economics teaching and the social welfare worker. The colleges have courses in social economics, but the social worker, who goes out without some intensive study of how to meet the woman's problems and to know the child's nutritional condition, is assuming a great re-

sponsibility. More home economics women must enter this type of work. Some of our people are doing this work and doing it extremely well.

Research. One of the newer lines of work in home economics is our research work. It has reached a high point through the development of the studies in nutrition, in educational tests, in commercial processes, in retail salesmanships.

The University of Iowa has made a great step forward. There, in its child welfare station, a home economics worker is in charge of the nutrition of children. In the medical college there is a chair held by a nutrition woman, a former professor of home economics at Illinois. The home economics work began in the kitchen; now it is recognized as of full professorial rank in the school of medicine. Medicine began in the barber shop. Which can call the origin of the other in question?

Some man has said, "The work of the physician is to eliminate himself." We are also teaching our people to live sanely without us. It is preventive standards that we need. We must put education on the positive bases, making health education the foundation in the broadest sense. We must train the woman to be the wise chooser, and the wise buyer. This achievement needs to be handled with every great wisdom so that business may coöperate in the movement. We must teach the sales people to make their quick turnover count for the increased profit. Men and women have learned not to buy when the price is high. We must meet the trade halfway and teach that buying should be equalized so that returns are steady, and thus remedy the present economic condition that is serious.

The last and most recent achievement is carrying home economics teaching into the world movement. In Constantinople, our Mrs. Norton, a home economics woman, is being sent by all of us to aid in teaching the girls of the Balkans, Turkey, and Armenia. She is to bring into the lives of the oriental people the standards of the home economics home which they have not. It is an attempt to respond to the call for occidental standards in the oriental countries. We have had before this, in one of the smaller states in India, one of our home economics teachers establishing schools and developing the work for the woman in that particular state. There are unanswered appeals from Japan and China and Australia for home economics women to come over and help them. It is the beginning of the world movement.

SOME EXPERIMENTS ON THE DIGESTIBILITY OF ROLLED OATS PREPARED IN VARIOUS WAYS¹

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During the war, the program of wheat conservation raised anew questions in regard to the best methods of preparing rolled oats for human consumption. The insistence upon long hours for the cooking of cereals, and especially oats, has been a drawback in the use of such food materials. It has been clearly shown by Langworthy² and others that cooking is not necessary for the digestion of some kinds of pure starch, but the question still remains as to whether short cooking by various processes insures such changes in the starch or in the mechanical condition of the food under consideration as to make its utilization rapid and complete.

Daniels and Strickler³ have shown that cooked starch grains which have microscopically all the characteristics of raw starch may be well digested, though they hold the opinion that raw starch in pastry, for example, may be a cause of indigestion. A good criterion for the digestibility of starch in food does not seem fully established.

The following studies include oatmeal in the form of mush, wafers, muffins, and macaroons. The subjects were all healthy young women, and the oatmeal preparation was in each case made a part of a simple mixed diet taken uniformly throughout the experimental period. The food was all analyzed in the laboratory, and feces examined for protein and carbohydrate, sometimes fat, nitrogen being determined by the Kjeldahl method, and carbohydrate in feces by hydrolyzing ten-gram samples of dried feces two hours with 200 cc. of 2 per cent hydrochloric acid solution (using a reflux condenser), making up to 250 cc., filtering, and determining glucose by Allihn's method.

Little difference in the carbohydrate utilization was found in the various experiments. Since the fat in oatmeal is almost negligible in a mixed diet, it was not usually studied. The greatest differences were found in the coefficients of digestibility of the protein. This is in harmony with observations made by Harcourt and Fulmer⁴ that the absorp-

¹ The data of these experiments were secured at various times by different students working in the Nutrition Laboratory.

² *Journal of Biological Chemistry*, 1920, 42: 27.

³ *Journal of Home Economics*, 1917, 9: 109.

⁴ Ontario Department of Agriculture Bulletin 162 (1907).

tion of the protein of rolled oats was somewhat greater when the food had been subjected to long cooking, the coefficients of digestibility being from two to five per cent higher when the oatmeal was cooked eight hours as compared with that cooked twenty minutes. The coefficients for protein and carbohydrate found in the experiments which follow are given in the table below.

Coefficients of digestibility for diets containing rolled oats prepared in various ways

EXPERIMENT NUMBER	METHOD OF PREPARATION	PROTEIN	CARBOHY- DRATE
I	Mush cooked over night in fireless cooker.....	93.9	99.6
II	Mush cooked over night in fireless cooker.....	94.8	99.8
III	Mush boiled 10 minutes.....	91.9	99.5
IV	Mush boiled 10 minutes.....	91.2	99.6
V	Wafers, commercial.....	87.8	99.9
VI	Wafers, homemade.....	83.9	99.0
VII	Muffins.....	87.6	99.6
VIII	Macaroons with corn syrup.....	91.1	99.2
IX	Macaroons with corn syrup.....	92.7	99.9
X	Macaroons with corn syrup.....	91.3	99.8
XI	Macaroons with sugar.....	90.6	99.3
XII	Macaroons with sugar.....	91.8	100.0

REPORT OF EXPERIMENTS

1. OATMEAL MUSH

Two young women served as subjects. The time was divided into a fore period of three days in which there was added to a simple mixed diet oatmeal mush made from 100 grams of dry rolled oats cooked over night in a fireless cooker. The amount of water in each case was uniform and the food was cooked from 6:00 P.M. to 7:30 A.M. in the cooker after having been boiled over the flame for ten minutes. The second period also consisted of three days, during which the amount of oatmeal was the same, but cooked only by boiling for ten minutes.

Besides the oatmeal mush the diet consisted of a small amount of lean round of beef (ground in a food chopper), milk, grape and orange juice half and half, white bread and butter, to make a dietary suited to each individual's requirement. The feces were marked off for each period by carmine. The results are shown in the following table.

Daily intake and output and coefficients of digestibility

	I. LONG COOKING				II. SHORT COOKING			
	Protein		Carbohydrate		Protein		Carbohydrate	
	J. W.	R. E.	J. W.	R. E.	J. W.	R. E.	J. W.	R. E.
Intake, grams.....	97.6	59.1	246.0	199.0	97.6	59.7	246.0	210.0
Loss in feces, grams.....	5.9	3.0	0.8	1.0	7.8	5.3	1.0	0.7
Coefficients of digestibility for ration.....	93.9	94.8	99.6	99.8	91.9	91.2	99.5	99.6

If an allowance of 4 per cent for loss on the protein of the diet exclusive of oatmeal be made, the losses of oatmeal protein appear greater in the period of short cooking by ten and thirteen per cent respectively for the two subjects. These losses are greater than those similarly calculated by Harcourt and Fulmer, probably because the time of cooking was only half as long. It must be remembered that these experiments show nothing of the rate of digestion, which is an important factor where ease is concerned. According to Snyder⁵ in beaker experiments oatmeal cooked for half an hour goes into solution much less quickly than oatmeal cooked for four hours. In these two experiments, however, no discomfort or signs of fermentation could be noted with the oatmeal cooked only ten minutes, but undoubtedly texture and flavor were much improved by the longer cooking.

II. OATMEAL WAFERS

Paralleling the above experiments, a third subject took in the first period commercial oatmeal wafers, in amounts estimated to yield about 100 grams of dry rolled oats per day, and in the second period similar wafers made in the laboratory with rolled oats ground in a food chopper.⁶ The results are summarized below.

Daily intake and output and coefficients of digestibility

	COMMERCIAL WAFERS		HOMEMADE WAFERS	
	Protein	Carbohydrate	Protein	Carbohydrate
Intake, grams.....	63.3	178.0	63.6	178.0
Loss in feces, grams.....	7.8	1.0	10.2	1.0
Coefficients of digestibility for ration.....	87.8	99.9	83.9	99.0

In this case, if the same assumption of a loss of 4 per cent on the protein of the other foods be made, the coefficients for the oatmeal alone fall to 65 and 50 per cent respectively. At any rate, the oatmeal in this form was the least well utilized of any in the series, if judged by the protein absorption.

III. OATMEAL MUFFINS

This experiment was undertaken partly to study the efficiency of oat protein in the human dietary, and the muffins were accordingly made with more water and less milk than ordinarily used, the recipe being as follows:

Recipe for oatmeal muffins

Rolled Oats.....	2 cups	Fat.....	2 tablespoons
Water.....	1 cup	Flour.....	1 cup
Milk.....	$\frac{1}{2}$ cup	Baking powder.....	4 teaspoons
Egg.....	1	Salt.....	1 teaspoon
Sugar.....	2 tablespoons		

The milk and water were poured boiling hot over the rolled oats and the mixture was allowed to stand one-half hour before the other ingredients were added.

The daily diet consisted of 165 grams of rolled oats (dry weight) plus milk, flour, egg, butter, apples, and sugar to make a total of 45 grams of protein, 94 of fat and 283 of carbohydrate, 8.3 per cent of the total calories being derived from protein, and the rolled oats contributing 60 per cent of the total protein.

⁵ Minnesota Experiment Station Bulletin 74 (cited by Harcourt and Fulmer).

⁶ Using the recipe for Scotch wafers, Boston Cooking School Cook Book (Farmer).

The experiment lasted twelve days. Feces were collected and combined in four-day periods for analysis. The subject was in nitrogen equilibrium after the first day, the ration yielding 0.81 gram of protein per kilogram of body weight. The nitrogen in the feces for each of the three periods was as follows: Days 1-4, 1.01 gms. per day; days 5-8, 0.88 gm. per day; days 9-12, 0.64 gm. per day.

From these figures it is clear that the continued use of the muffins did not result in any less good digestion. Since this work was done, Sherman and Winters⁷ have shown that nitrogen equilibrium can be maintained in the human adult on 0.5 gram of protein per kilogram per day when 90 per cent of the protein of the diet is furnished by oats, thus demonstrating the efficiency of this protein when supplemented by a very small amount of milk.

On this ration the daily intake and output and coefficients of digestibility were found to be as follows:

	PROTEIN	FAT	CARBOHY- DRATE
Intake, grams per day.....	45.3	94.0	283.0
Loss in feces, grams per day.....	5.6	3.6	1.0
Coefficients of digestibility of ration.....	87.6	96.2	99.6

Calculating the coefficient of digestibility of protein for oatmeal alone, with an allowance of 4 per cent loss on the other foods, gives 92 per cent. It seems fairer, however, to consider the coefficient of the ration as a whole in these cases, inasmuch as the presence of the oatmeal would tend to affect the coefficients of all the foodstuffs involved on account of the influence of the cellulose.

IV. OATMEAL MACAROONS

Since oatmeal macaroons are made without the addition of fluid and are cooked but a short time, it seemed likely that they would prove to be the least well utilized form of rolled oats, but such was not the case. The first experiments were made during the period of sugar shortage of the war, and corn syrup was used instead of sugar, with the result that the macaroons were sticky and required a great deal of mastication. Consequently, when these experiments showed surprisingly good utilization of the oats, they were repeated using sugar, according to the usual recipe (3 eggs, 1½ cups sugar, 2 tablespoons butter, 3 cups rolled oats, yielding 550 grams of baked macaroons).

SUBJECT	DIET, PERIOD I	DAILY INTAKE		
		Protein	Fat	Carbohydrate
	grams	grams	grams	grams
		71.3	68.0	310.0
E. H.	Meat..... 66 Bread..... 257 Rice ⁸ 114 Sugar..... 52 Milk..... 732 Butter..... 39	DAILY OUTPUT IN FECES		
		Protein	Fat	Carbohydrate
		grams	grams	grams
		7.4	3.7	1.7
		COEFFICIENTS OF DIGESTIBILITY		
		Protein	Fat	Carbohydrate
		89.7	94.6	99.5

⁷ *Journal of Biological Chemistry*, 1919, 39:53.

⁸ Dry weight.

SUBJECT	DIET, PERIOD II	DAILY INTAKE		
		Protein	Fat	Carbohydrate
	<i>grams</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>
		90.5	90.7	256.0
		DAILY OUTPUT IN FECES		
		Protein	Fat	Carbohydrate
		<i>grams</i>	<i>grams</i>	<i>grams</i>
E. H.	Meat.....110			
	Bread.....117			
	Macaroons...382	8.1	5.5	2.0
	Milk.....578			
	Butter..... 25			
		COEFFICIENTS OF DIGESTIBILITY		
		Protein	Fat	Carbohydrate
		91.1	93.9	99.2

Summary of experiments with oatmeal macaroons

SUBJECT	PERIOD	COEFFICIENTS OF DIGESTIBILITY			GAINS AND LOSSES IN MACARON PERIOD (II)		
		Protein	Fat	Carbohydrate	Protein	Fat	Carbohydrate
E. H.	I	89.7	94.6	99.5			
	II	91.1	93.9	99.2	+1.4	-0.7	-0.3
D. J.	I	84.9	86.8	100.0			
	II	92.7	93.1	100.0	+7.8	+6.3	0.0
E. W.	I	91.1	94.1	98.3			
	II	91.3	94.2	99.8	+0.2	+0.1	+1.5
H. C.	I	89.2	Not determined	99.1			
	II	90.6		99.3	+1.4		+0.2
L. S.	I	94.7	Not determined	100.0			
	II	91.8		100.0	-2.9		0.0

The time was divided into periods of three days each, and the diet was uniform for each period. In the first period the foods were lean chopped beef, rice, sugar, milk, bread and butter. In the second period macaroons were substituted for the rice and bread. The results of one of the five experiments are given in detail above, followed by a summary of the series.

It is evident from the above figures that the substitution of between two and four hundred grams of oatmeal macaroons per day for calorically equivalent amounts of rice or rice and bread did not decrease the coefficients of digestibility of any of the foodstuffs except in one

subject, nor did the change from a sticky macaroon made with corn syrup to a crisp one made with sugar (the last two cases) make any marked difference. The average coefficients of digestibility for the macaroon diet as compared with the bread and rice diet are as follows:

Average coefficients of digestibility

	PROTEIN	FAT	CARBOHY- DRATE
I (bread and rice diet).....	89.9	91.8	99.6
II (macaroon diet).....	91.5	93.7	99.7
Difference in favor of macaroons.....	1.6	1.9	0.1

SUMMARY

In so far as non-appearance in the feces can be taken as a criterion, rolled oats is a very digestible food, whether cooked a long or a short time in the home. The rolled oats used was loose rolled oats, bought at a large market, and not a fancy, specially prepared product. Differences in preparation affect the apparent utilization of protein more than of carbohydrate. The protein of oatmeal wafers was less well utilized than that of oatmeal macaroons. This might possibly be explained by the greater amount of mastication induced by the macaroons. Differences in length of time in cooking oatmeal mush affect rate rather than completeness of digestion, and also affect palatability, as influenced by flavor and texture.

FACTORS INFLUENCING NUTRITION WORK AMONG ITALIANS¹

LUCY H. GILLET

New York Association for Improving the Condition of the Poor

We have been studying the factors that seem to be detrimental to good nutrition in a group of Italians corresponding to the peasants in their own country. So far as I know we have very little evidence that the better class of Italians need attention *more* than the better class of Americans. But because the Italians that come to our country and live in crowded districts are so in need of help it seems like time

¹ Read at the meeting of the New York Nutrition Council, March 7, 1921.

well spent to gather together such information as relates to their particular problem. It must be admitted at the outset, however, that the economic factor plays a very prominent part in the whole problem, and, while this makes the problem more complicated, many conditions may be improved through education.

In considering the family life of Italians we are impressed at once with the size of the families. It is not unusual to find families with 12 children and often they number as many as 18 or 20, and seldom less than 5 or 6 unless the family is just begun. Few day laborers can earn enough to provide the necessities of life for such large families. Although the older ones are able to work before the younger ones arrive, there are still too many to be maintained in good health through the efforts of one pair of hands. To help out financially the women work but the children suffer thereby. Much of this supplementary work is done in the home through the making of flowers for hats, or finishing on coats and trousers. The remuneration at best for this work is small and the natural desire to earn the maximum results in a neglect of the home and the children. The children eat irregularly. Their midday meal frequently consists of bread eaten on the street. The younger children remaining at home crawl about dirty floors in poorly ventilated, sunless rooms with very little attention. The peasant women have been in the habit of working in the fields and are therefore not accustomed to house work. When they come to this country they go to the factory and often marry at the age of 16 or 18. This has given them little opportunity to become homemakers.

Where there are such large families, living quarters are congested. They economize space by sleeping across the bed (5 or 6 in a bed)—or two or three with heads at the top and two or three with heads at the foot of the bed. The sleeping rooms in these houses are often on the airshaft with one window large enough to admit only as much fresh air as one person needs. In winter they do not have their windows open at night. In one family of ten the four older children occupied a three-quarter bed in a small dark room, the parents and three younger children slept in a bed made up each night in the living-room, and an uncle slept in another small bed. The mother said she could not open the windows at night as the children slept in their underclothes with only two sheets over them—all the bedclothes she had. Boarders or lodgers are not uncommon in such homes. Under such conditions it is difficult for children to get to bed early or for them to get as much sleep as they need. Indeed we are beginning to wonder if as much responsibility for mal-

nutrition in the congested districts may not be put upon the sleeping conditions as on the food itself. If the body has not been properly rested there is every reason to believe that the system cannot make proper use of the food that is taken into it. If the body does not receive fresh air to oxidize food, the food is of little value.

But in spite of the neglect of the home, there are many native traits that give good promise for rapid development under proper guidance. The attempt to decorate their houses may result in cluttered, unsanitary surroundings, difficult to keep clean, but this is probably due to an untrained artistic temperament that could easily be trained to produce attractive, healthful homes. The average Italian family has good clean beds. The average woman does beautiful needlework. The women who are at home wash their clothes frequently, and we marvel at their whiteness. These customs must spring from a real sanitary instinct which it should not be difficult to call into activity along other lines.

These people are illiterate, and the material telling them how to do things, material that would stimulate them to a sense of responsibility, is not within their reach. They have few books or magazines. They have so few contacts with the outside world that they do not know what is going on. They do not appreciate this wave of enthusiasm that is sweeping the land in the interest of child welfare. As with most laboring classes, the man that earns the money for their daily bread must have the best there is so that he may keep in good condition. They frequently say, "Oh my man must have meat because he works, but the children, they can eat anything." The welfare of the children is, therefore, subordinate and they are unconsciously neglected.

Another very striking characteristic of the Italian people is their emotional nature which seems especially to come to the front at mealtime. This may be because child discipline, weak in so many families of all nationalities and all classes of people, is lacking to a large extent at mealtime. When the children are all together, the aggravations are probably in direct proportion to the number of children, and the emotional nature is overstimulated, but, whatever the cause, a family of Italian children seldom eats its meals in peace. Someone is nagging, scolding, or, in their phraseology, someone is "yelling" at them all the time. We are appreciating more and more the influence of child discipline on the amount of defective nutrition among children of all nationalities.

We are sorry to acknowledge that we frequently attribute a failure to gain physically to lack of control by the parents and the tension that accompanies a high-strung atmosphere. One boy who was in such an

atmosphere at school would wake up at night screaming, thinking that his teacher was hitting him. Through a bit of cooperation that was obtained at home he was the first of a group to gain in weight. The teacher's attitude toward him changed as she held him up to the rest of the school as an example. The mother said that he began to sleep more quietly and the improvement in him was steady from that time on. The nutrition problem is not all a question of food. We must find out what is preventing even the right food from doing good work. We must make the conditions possible for good nutrition. Fresh air, exercise, rest, sleep, and congenial surroundings must all be considered as much a part of the nutritional problem as the food itself.

As to dietary habits, there are good qualities in the diet of the better class of Italians in this country, and among all Italians in their own country, but when they have to economize they frequently economize in the wrong direction. In this they are not unique. Every peasant in Italy has his own goat or else his neighbors have such a supply that he is able to get milk at a very low price. The price of milk in this country seems excessive, and, not knowing its food value, a spirit of economy prompts them to use coffee instead. Coffee is comparatively cheap here but expensive in Italy. When milk is used, a spirit of thrift prompts them to boil the milk to keep it from souring in summer.

A taste for sweets is also acquired in this country. The children learn from American children to spend their pennies for candy at the corner stands. They have not been accustomed to candy in Italy, neither do they have it at home, but they buy it on the street corners to eat between meals. One man said, "America, no good—too much candy." No milk, and too much coffee and candy are the greatest factors of the nutritional problem of the malnourished Italian children.

Cheese is used freely but during the last few years, when Italian cheese was \$1.50 a pound, they preferred to use less rather than to substitute American cheese at 50 cents. They could not see that \$1.50 spent for American cheese would buy three times as much nourishment.

As far as I can find out, very few root vegetables are used even among the better class of Italians. Potatoes are not used so abundantly as with us. When used they are too frequently fried. However, excellent vegetable combinations, from a dietetic point of view, such as escarol and rice, greens and beans, potatoes and cabbage or spinach are used.

They use green vegetables and tomatoes freely. These have probably been their salvation in supplying vitamins ordinarily obtained in milk,

but in cases of economy they use the green vegetables for flavor just as they use their Italian cheese in preference to our American cheese, thus running the risk of a deficiency of both iron and vitamins. Oil is used in place of butter, but when green vegetables are used abundantly there is perhaps less danger of vitamin deficiency from this habit than we have been led to believe. There is danger when oil is used to the exclusion of butter in a diet low in both milk and green vegetables.

The use of macaroni is too well known to need discussion. It may be and probably is used to excess—especially when used to the exclusion of coarse cereals. In Italy much dark bread made of whole wheat is used. Here only refined flours are used. There is a national prejudice against oatmeal but experience has shown us that it is only a matter of time before it will be generally adopted.

The children eat very little meat. Most of the meat prepared for the whole family is made into stews, or ground and mixed with macaroni and tomato sauce, so that the quantity eaten by the children is comparatively small. Eggs are more abundantly used for the children than meat, and are often used to excess. The dessert of the Italians is frequently fruit. This is an improvement over the desserts that are seen on the tables of our own well educated people.

Summarizing the dietary habits, the most desirable features are the use of green vegetables and fruit and very little meat for the children. Foods that should be encouraged are milk, coarse cereals, root vegetables and potatoes, while the things to be eliminated are candy between meals and coffee. Calories are usually adequate. They are supplied through oil and macaroni; protein is probably sufficient for the adults as provided in eggs, meat, cheese, and beans, but there may be a question whether or not the children get enough protein without milk, or whether eggs and beans, which are often their chief source of protein, supply enough protein in the most desirable form. Because of the scarcity of milk, calcium is probably deficient unless green vegetables are used in very large quantities. If green vegetables are used in abundance, there is also little danger of a deficiency of iron or of the fat-soluble vitamins, but in families where economy is a factor, and where green vegetables are used for flavoring, there is danger that iron may be inadequate. Unless milk and butter are used freely, and in all probability they will not be if economy has caused a scarcity of vegetables, the fat soluble vitamins may be deficient also. Tomatoes and fruit provide antiscorbutic qualities. When, as in so many homes, we find no root vegetables or whole grains used, we are fearful that the children are not getting sufficient water soluble vitamins.

Many people have been sceptical about changing the food habits of various nationalities. We see no reason why the habits should be changed except in so far as to make them consistent with health, and perhaps of greater convenience to the people. It may be difficult for them to get in our markets the foods to which they have been accustomed, and they, not knowing how to substitute, will provide a diet far removed from what the children need. We believe it possible to build upon the good already in the diet so that the new foods will be appreciated and accepted. We know that the children ask for American foods as soon as they begin to eat away from home—hence we do not hesitate to introduce them as fast as they will be accepted.

These people are laboring with great handicaps. They have families larger than they can support, and mothers work to supplement the wages; they live in congested unsanitary quarters, with inadequate sleeping accommodations, they are ignorant of the importance of the care of the child if he would become a strong man, they are emotional by nature, they have few contacts or little chance to learn, they have come to this country from a land where milk, vegetables, fruit, and coarse bread are abundant and cheap.

We know that education in the simple rules of health is having its effect. If the economic status could be overcome, many of the other unfavorable conditions would right themselves, but shall we wait for that time? Can we not bring about much through education? Probably the housing condition is responsible for many of these other conditions. It is the consensus of opinion of those working in and representing the Community House in the Italian district, on Mott Street, that, if a block could be torn down and a new sanitary one built on its site and financed partly or wholly by the neighborhood, it would be the dawning of a new day for that district. With housing improved, education will overcome ignorance, the people will demand better living conditions, they will be stimulated to make greater efforts, and responsibility will develop a community conscience, so necessary to the permanency of any work. Even though the housing cannot be remedied immediately, education will help them to make the best of what they have.

PROGRESS REPORT ON THE PETTICOAT TEST

Probably no piece of work carried on by the Committee on the Standardization of Textile Fabrics has created more interest among home economics women and others than the wearing test for petticoat silks, undertaken to shed some light on specifications that would produce fabrics insuring a minimum standard of wear for silk underskirts.¹

Petticoat silks were selected partly because the silk underskirt is an important and comparatively expensive item in the wardrobe of the American business and professional woman, partly because silks suitable for this use are more or less suitable for coat linings, and partly because, for some time before the test was outlined, women all over the country had been complaining of the poor wearing qualities of silk fabrics, especially those used in ready-to-wear petticoats.

The large scale wearing test planned by the Committee, in which about eight hundred petticoats were made up after the same model from three experimental taffetas and three experimental messalines, was designed to supplement the laboratory studies that were to be made on the structure of the silk, its tensile strength and endurance. The latter is tested on the new abrasion rubbing apparatus that is being set up in the textile laboratory of the Bureau of Standards in Washington. Manufacturers and others rightly claim that standard laboratory tests do not and cannot tell us the whole story of the stresses, strains, and other deteriorating influences to which fabrics are subjected in actual wear. The Committee's aim was to conduct this test on a large enough scale to enable it to place beside the story of the laboratory a reliable endurance record of each silk, based on the actual wear by a large number of persons under varied conditions.

PROCEDURE

This test has been under way since June first, 1920. In April 1921, notices were sent to the earliest purchasers asking them to send in wearing records, together with the worn skirts if these had reached the point of discarding. The present paper is a progress report based on the first one hundred and fifty wearing records turned in. We are anxious to collect as many other records and as many of the discarded skirts as possible, so that within the next few months we may present a final and comprehensive report of the whole test.

¹ Readers interested in the work of the Committee on the Standardization of Textile Fabrics are referred to earlier articles in the issues of the JOURNAL:

Some Suggestions from the Textile Section. September 1919, pp. 388-392.

Recent Work of the Committee on the Standardization of Textiles. March 1920, pp. 101-109.

Petticoat Lane to Prosperity. May 1920, p. 223.

Plans for Textile Research under the National Research Council. September 1921, pp. 400-401.

Report of the Committee on the Standardization of Textile Fabrics. September 1921, pp. 434-435.

Specifications and data from analyses

	WEIGHT PER SQUARE YARD	APPROXIMATE NUMBER THREADS PER ENGLISH INCH		WEIGHTING		DYE
		Warp	Filling	Warp	Filling	
	<i>ounces</i>			<i>ounces</i>	<i>ounces</i>	
<i>Messaline</i>						
Test A.....	1.5	205	105	Bright, 18-20	Souple, 22-24	Metallic
Test B.....	1.2	205	120	Bright, 14-16	Bright, 14-16	Best vegetable
Test C.....	1.5	245	120	Bright, 14-16	Bright, 14-16	Best vegetable
<i>Taffeta</i>						
Test A.....	1.8	200	101	Bright, 16-18	Bright, 16-18	Metallic
Test B.....	1.3	200	107	Bright, 14-16	Bright, 14-16	Best vegetable
Test C.....	1.5	224	104	Bright, 14-16	Bright, 14-16	Best vegetable

Tests B and C in each case were pure dye silk; test A carried some weighting.

For both messaline and taffeta, A, B, and C, the warp was 2 thread orgazine (13-15 deniers); the filling in A and B was 3 thread tram (13-15 deniers), and in C, 4 thread tram (13-15 deniers).

Extremes selected from reports

TEST	DAYS OF WEAR		PRESENT CONDITION	WEAR GIVEN	WEIGHT OF WEARER	REMARKS
	Whole	Part				
<i>Messaline</i>						
Test C...	240	0	Fair	Good	165	Very hard wear for nearly eight months
	60	0	Gone	Poor		"Disappointed"
Test B...	198	28		Good	128	Very hard wear; did not try to save it in any way
	52	0	Gone	Poor		Worn almost constantly on trip. Harder on silk skirts than most persons
Test A...	194	0	Gone	Medium	135	Wore at waist line under stiff skirt belt end first month. Otherwise, better service than any messaline skirt I have ever had
	63	14	Almost gone	Poor	133	Can still be mended
<i>Taffeta</i>						
Test C...	148	4				Showed signs of wear first month
	50		Bad	Poor	118	In 19 days cut down crease and down stitching and cording
Test B...	28	180	Wearable	Poor		Wearing on cords, knees, back
	34		Badly worn	Poor		Split down front after 25 days
Test A...	150		Gone			
	49		Breaking	Medium		Breaking at cords, ruffle, hips

The experimental silks were manufactured for the Committee by the Stehli Silks Corporation of New York City. Taffeta and messaline were selected because they are perennial favorites for petticoats and are also quite generally used for coat linings. The three qualities selected were designated as Test A, Test B, and Test C, respectively. Test A was to be slightly weighted, Tests B and C were to be so-called pure-dye silks. The color throughout the whole order of eighteen hundred yards was changeable navy blue and green.

The specifications were worked out by Mrs. Mary Schenck Woolman and Mrs. Ellen B. McGowan for the Committee in conference with E. M. Barlow, general manager of the Stehli Silks Corporation.

The table on the preceding page combines these specifications with further data compiled from analyses of the silks by Elizabeth Weirick, of the Sears, Roebuck & Co. testing laboratories.

The prevailing slender silhouette and the high price of raw silk were contributing factors in determining that the silks should be fine and comparatively light in weight. Stiff "rustly" skirts were not in demand when many women were wearing "pettibockers" and some were dispensing with underskirts altogether.

Mr. Barlow, General Manager for Stehli, gave generously of his time and interest in advising with the Committee, and made us the most advantageous prices possible. His mill people took a personal interest in the actual manufacture. Samples of the test silks were exhibited by the Stehli at the International Silk Show in New York City last fall.

A skirt manufacturer made up the petticoats and mailed them out on order of the manager of petticoat sales. The design tentatively selected was submitted to one of the clothing construction classes at Teachers College for suggestion and criticism. The model finally ordered was a four gored skirt with elastic waist band, closing with a snap in the back. It had a scant bias ruffle 10 inches deep, trimmed with serpentine tucks. At the foot of this ruffle was set a three-inch knife pleated ruffle, over a dust ruffle. In the earlier deliveries the pleated ruffle was stitched with several rows of ornamental stitching, and the tucks were corded. Neither the stitching nor the cording wore well however, and were eliminated from the later shipments.

A tabulation has been made from 150 returned records. The extremes for each of the six test silks are selected from it and presented on the preceding page to show the variation in the amount of wear secured by different people from the same kind of skirt.

DISCUSSION

The returns prove emphatically that the personal equation is a leading factor in the endurance of silk; that is, that bodily excretions or acid exhalations even when not in direct contact with silk may be an agent for destruction greater in some cases than in others; that different activities and habits of movement, the type of garment worn over and under the skirt, and the size and shape of the wearer are factors as important as picks and ends and weighting. The very long corset and the extremely sheer underwear commonly worn in these days, together with the narrow skirts, make the petticoat test a severe ordeal for any silk fabric.

The design and dimensions of the skirts were commented on by several wearers. The fineness and sheerness of the silk, demanded by the modern style of skirt, have already been mentioned. To adapt itself to the outer skirt the petticoat design was characterized by lack of fullness. The slightly gored back breadth had a tendency to cause tension and consequent splitting

or tearing over the knees and at the back. The heavy cord in the ruffle, discarded in the later skirts, proved to be a weak point in construction.

The tabulations quoted were made from the returns first received, which naturally included a large proportion of the skirts worn out first. Moreover, the period of wear included the summer or early fall months in many cases, and, in the report as to the kind of wear, vacation traveling was often specified. The variations point to the importance of a large number of records in order to make some fairly reliable estimate of the demands of the "mean" (in the arithmetical sense) business and professional woman. We must secure more records if we are to attempt to fix a minimum standard of wear.

The committee feels that much valuable information is being gained from this petticoat test, not only in the matter of design but in regard to the type of silk best adapted to present day wear in petticoats. The interest which the Stehli Silks Company took in the project is evinced in their desire to give the American Home Economics Association beautiful fabrics, which may have proved too fine and exquisite for the type of wear required. The fact that in many cases petticoats are still being worn and are in good condition after nine months to a year's wear, proves the quality of the silk. The Stehli Company made generous concessions in the matter of price at a time when silks were at the peak of high prices, and gave their time and interest. The thanks of the American Home Economic Association are gratefully tendered them.

In the final report, which will be prepared as soon as tabulations are sufficiently complete, comparisons will be made of the construction and wear of the petticoat silks, with the silks used in the "Small Samples Test," and with silk linings and petticoats of all types which have been submitted to the committee, together with the record of wear.

ELLEN BEERS MCGOWAN,
For the Textile Standardization Committee.

THE CALL OF THE BUSINESS WORLD FOR TRAINED WORKERS¹

JOHN WILLY
Editor, Hotel Monthly

In presenting my subject I can speak only from observation in my particular field, which is the hotel, with fringe of restaurant, lunch room, tea room, cafeteria, club, hospital, institution, boarding school,

¹ Presented at the meeting of the Illinois Home Economics Association, Oct. 22, 1921.

industrial plant with catering department, transportation catering, and other agencies that minister to bodily health and creature comforts. The hotel, as I see it, is nothing more than a wholesale home, the housing and feeding of people in larger numbers than that of the average family. It is preeminently a business of domestic work. It calls both men and women. It is most honorable work, since it is that which most closely serves mankind for his physical well-being, which is the base of mental well-being.

Unfortunately, domestic work has been unpopular in recent years. Why this is so I do not know; but in America it has been difficult to induce intelligent people to take up hotel or institution catering. There seems to be a feeling that this work is demeaning. Most of the people in this employment have been of foreign birth, and when the great war broke out there probably were more foreign people engaged in the catering trades than in any other industry. Perhaps this was because Europe trained people for this business, and they came to America to secure the larger wage paid for this work. The field was invitingly open to them, there being practically no competition from American workers other than that from the most uneducated classes. These conditions, seemingly, kept a great many Americans from taking up this work, for their associates would be largely people of foreign birth and language, or, if American, lacking refinement in habits or speech. Then, too, the working conditions have been unattractive.

The war, however, has brought about a big change. The call from the European nations for their subjects to return to fight took tens of thousands of trained employes from American catering establishments back to Europe, where the great majority have remained. This is the psychological time for training workers for this industry, and for raising the standard of domestic work, particularly as it applies to the service of those who travel or who must be housed and fed part of the time away from the family.

Now is the time when the preparation of foods may be undertaken with more intelligent direction than heretofore, to the great benefit of the general health of the people at large; our food may be cleaner and more appetizing, and the balanced ration more often provided. Then, too, the housing accommodations may be more comfortable, more attractive in their furnishings, more wholesome from the sanitary and pure air point of view, and more conducive to rest and refreshment of body and mind. It is up to intelligent people to do this work,

and to make it more attractive. The call is for them. They can bring about a reformation in working quarters, so that the working surroundings may be wholesome. They can, by example, so raise the standards of domestic work that a higher grade of people will come into the business under their direction, and, incidentally, they can benefit private homes, for it will be a leavening influence of nation wide scope.

As illustrative of home economics work: Two years ago I discovered in the largest hotel in the world (The Pennsylvania-Statler of New York) a dietitian who compiled the menus for eight hundred employes, the management believing that, if employes were rationally fed, and the menus prepared by a trained person, there would be more content and less waste. The experiment was so satisfactory that dietitians are now in all of the five hotels of the Statler chain, in other hotels that have followed suit, in department stores, in hospitals, and in some of the large industrial catering plants. It was proved in the Pennsylvania Hotel that the employes were benefited; they were made more efficient by the wholesome meals prescribed by the dietitian. Not only that, but the hotel saved thousands of dollars a year in the economy that prevented waste.

Trained women are also fitted for other work. For instance: Mr. Boomer of New York, who controls ten thousand rooms and employs over ten thousand people, draws from universities for his executives, all of whom have first to go through an apprenticeship. He employs a woman to operate tea rooms, a woman to control the women's floor in one of his hotels, a woman head of the travel bureau. One of his trained women was given the management of the big Cafe Savarin. The manager of the Statler Hotel, Detroit, has six executives who are college trained. He himself worked his way through college by learning the catering business in a local hotel.

I would also emphasize the fact that one cannot be trained to fill any one position in the catering world, because no two establishments are alike. One must adapt herself to conditions. There is no other business that is so dependent upon initiative for success. Most of the worth while positions occupied by women today were created by themselves, of their own initiative, demonstrating the practicability of an idea, and blazing the trail for others. They are the pioneers that have brought the call of the business world for trained workers.

Feeding and housing is the biggest business in the world. In the United States alone 120 billion meals are eaten every year, of which 12 billion are prepared in public eating houses and institutions. Is this not a rich field for home economics?

This brings me to a matter in which I am greatly interested, and am trying to bring about—the operation of a hotel on every college campus, the hotel to be in the nature of a training school for workers especially attracted to some branch of home economics for their life's work. Take, for instance, the University of Illinois, with which I am most familiar. There they have something like eight thousand men and women students, a large proportion of whom do not know their future life-work and have no idea as to what it will be. They are educating themselves, trusting to find suitable occupations after they are graduated. As I have said before, the hotel training fits for every kind of related work, as institution, tea room, or whatever it may be. Many of these young people find it necessary to work their way through college, and it has been demonstrated that many students who have been employed in college town hotels or institutions have learned to like that kind of work, and, with their intelligence, have advanced so rapidly that, not long after leaving college, they have found lucrative executive positions.

The purpose of the hotel-on-campus is to have a small hotel, just sufficient for the needs of alumni, the family or friends of students, and a sprinkling of commercial people, so that the hotel can be operated scientifically; this hotel to be the nucleus of dormitories and dining halls, and to have a large kitchen and bakeshop with class rooms, the work of the students serving the entire campus as well as the hotel. In connection with this hotel, there should be the laundry, the garden for fruits and vegetables, an accounting department, electrical equipment (for ninety per cent of hotel and institution service is now electrical), the machinery hall, chances for the study of foods, of furniture, decoration, architecture, plumbing, fuel, ventilation, refrigeration, and the ways and means of cleaning and of maintaining buildings and furnishings. It is an opportunity to give education of head and hand in home economics.

FOR THE HOMEMAKER

HOMEMAKING AS A PHASE OF CITIZENSHIP

CORA M. WINCHELL

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Precious the home, though but a rifted rock,
Where way worn shepherd tarries with his flock!
Precious the friendly covert, though it be
Only a shelter of a lonely tree.
Dear is that world-old, warm, heart-pulling thing
To man and beast and bird one gladdening!
Dear is the roof, the hole, the lair, the nest,
Hid places where the heart can be at rest.

* * * * *

Yes, home will sweeten in the coming days
When widening love shall warm these human ways;
When every mother, pressing to her face
Her child, shall clasp all children of the race.
Then will the rafter and the oaken beam
Be laid in music and the poet's dream—
When earth, as far as flies the feathered foam,
Shall have in it the friendly feel of home.

—*From The Home Joy by Edwin Markham.*

The strength of a nation is at all times a subject of paramount interest to the world. It is reckoned by various standards, depending in part upon the purpose of the estimate. It may be rated in terms of the financial resources of the nation's exchequer,—and the magnitude of the sum taxes the comprehension of the average individual. It may be measured in terms of the natural resources of the land—her forests, her mines, her fertility, her water power, her climatic conditions, her natural beauties. It may be stated in terms of the tonnage of her navy and merchant marine, and the gross equipment of her army. It may be reckoned in population—in man and woman power, both mature and in childhood, and even in terms of prospective census findings. And we can vision in the future the determination of the "Intelligence Quotient" of nations, with the resultant graphic comparison of relative mentality.

The quantitative determination of man power, if we accept the statement of John Dewey, in his article, "What Holds China Back,"¹ may prove the weakness rather than the strength of a nation. He contends that the crowding of the people in that over-populated land has caused inhibition of the power of initiative and a tendency to deaden brotherly love and mutual helpfulness which are fundamental to the forward-moving nation. The human resources must be measured, then, not numerically alone, but also in terms of physical, mental, moral, and spiritual strength, and in terms of the power of the nation to maintain and increase that strength by means of intelligent and purposeful effort.

Through inheritance man brings into the world both strength and weakness, of body, of mind, of heart. Modern civilization brings to the rearing of man certain agencies which serve to encourage and develop the better, and to inhibit the less valuable tendencies, according to the present enlightenment of thinking men and women. Outstanding among these constructive agencies are the home, the church, the school, the press. It cannot be held true that these agencies are infallibly positive in their influence; but it cannot be denied that they are all powerful agents in the development of the human resources of a nation; and it is obvious that civilization is working, through them, to a higher plane.

America today is deploring the scarcity of well-trained teachers, because of the low salary schedule. The ministry is said to be attracting too few men of the caliber essential to leadership in spiritual development, and the thinking public is apprehensive. The "yellow sheet" in journalism is decried and deplored because of its negative influence upon thought and action in the affairs of community and nation. But it is only the occasional individual who senses any menace to civilization in the lack of intelligent preparation for homemaking and parenthood in the young men and women of our land.

It is difficult and unpleasant to conceive of a homeless land. It would be interesting to attempt to delete from the world's literature all allusions to home, its sanctity, its memories, its influence, its contribution to civilization. Upon man's tendency to create a family group and to dwell within a personal home is based much of the promise of sociologists for the stability of society. The biological theory of the tendency of life to reproduce its kind presupposes an abiding place for the infant organism. Despite the highly colored predictions of the

¹ *Asia*, May, 1920.

modernist who foresees an earthly paradise provided with community kitchens, cooperative-housekeeping-apartment buildings, communal day nurseries staffed by trained attendants who are said to be "far better able to provide for the child's care than the average mother can possibly be," the scarcity of individual homes, equipped for maintaining each family as an entity, is one of the menacing and soul-trying problems of the present period of readjustment.

Granted that citizenship in the last analysis expresses itself in an avowed belief in the cause of country, and in devotion to the furtherance of the highest ideals for her welfare, would it not be well to analyze her welfare in terms of the human capital which is fundamental to the realization of her highest ideals? The ultimate goal of social reorganization and adjustment must be reached by a long and sincere interchange of ideas,—an evaluation of their validity and their integrity. Concomitant to the sanity and well-focused vision essential to the evaluation of these ideas is the need for an environment, both personal and related, which will make possible the greatest freedom for mental and spiritual activity.

The sociologist recognizes the family as the fundamental basis of society. He recognizes in the family in the relationships of the various members, the relationships which exist in all social organization. Dr. Charles A. Ellwood, in *Sociology and Modern Social Problems*, considers the functions of the family under three heads: (1) the function of continuing the life of the species; (2) the function of conserving social possessions; (3) the function in social progress.

Under the third of these, the function of the family in social progress, Dr. Ellwood includes the opportunity to generate altruism in society, saying that "the family affection is the natural root of altruism in society at large"; and he concludes, "The nation whose family life decays, therefore, rots at the core; for its chief spring of social and civic virtue dries up."

With a sense of this relation of the home to the welfare of society, the business of homemaking assumes a share in the world's work which should relieve it of much of the monotony and drudgery with which it has been associated in the minds of many men and women.

The conception of a real home involves the association of kindred spirits. Correlative to this assumption is the modern ideal of a fair partnership in the business of homemaking, a partnership involving the participation of all members of the family group.

John Fiske attributes to the age of infancy an important contribution to the organization of the family.

What is the meaning of the fact that man is born into the world more helpless than any other creature, and needs for a much longer season than any other living thing the tender care and wise counsel of his elders? . . . It will appear that it was the lengthening of infancy which ages ago gradually converted our forefathers from brute creatures into human creatures. . . . But with our half-human forefathers it is not difficult to see how infancy extending over several years must have tended gradually to strengthen the relations of the children to the mother, and eventually to both parents, and thus give rise to the permanent organization of the family. When this step was accomplished, we may say that the Creation of Man has been achieved. For through the organization of the family has arisen that of the clan or tribe which has formed, as it were, the cellular tissue out of which the most complex human society has come to be constructed. And out of that subordination of individual desires to the common interest, which first received a definite direction when the family was formed, there grew the rude beginnings of human morality.

Having agreed upon the fact that the baby in the home plays a profound part in the business of homemaking by making homemaking necessary, it may be well further to analyze the share held by other members of the family in the corporation.

In the history of the race, the share of the various members of the family group has changed from time to time. Perhaps at no time has the principle of division of labor been less clearly defined in the business of homemaking than it is today. Woman's homemaking powers have been drafted into the larger home and she is contributing to community homemaking the womanly interest and wisdom which in times past were utilized only in the individual home. Through the franchise and her share in outside interests woman is extending to the other families in her own and other communities an intelligent supervision which she has given in the past to the welfare of her own family in relation to the milk and water supply, the system of garbage disposal, the health of women and children in industry, the promotion of wholesome recreation, and the beautifying of the environment.

In turn, man's share in homemaking has become less vicarious, and the life and business of the family are profiting from the broad vision and business sense which he is turning to account in the improvement of business methods in the home. It has been said that every child is

entitled to two parents; and there is a promise that the present tendency to equalize man's and woman's share in the life within and without the home will go far toward insuring well-rounded parental care.

The boy and girl in the modern home are returning by force of circumstances and by parental and educational foresight to a more intimate share in homemaking. The father and mother of vision are providing for the children opportunities for the wise expenditure and saving of money, for sharing in home duties, and for participation in constructive community activities. Modern education is recognizing its responsibility in training boyhood and girlhood for what has been happily termed "worthy home membership," and through the demands of that great modern educational principle, "learning by doing," the present day school boy and girl are being trained in the arts of home citizenship by sharing in the activities of the home and the community under the encouragement of both home and school.

For the purposes of analysis, woman's share in the business of homemaking will be treated in the further discussion of homemaking as a phase of citizenship; this will doubtless be considered perfectly just, especially by the woman herself, for hers is a busy life and in general provides less time for "extra home activities." Furthermore, the main business of homemaking falls upon woman, and she it is who finally "heads up" the effect of the home upon the members of the family group.

In order to contribute one's best to the solution of life's problems it is necessary to have a retreat from the busy world. The well-ordered home provides such a refuge for the members of the family. The homemaker contributes much to the sum total of human comfort and efficiency by maintaining a home atmosphere which modifies the complexities of the business world. This task demands health of body and mind, nerve poise, and a constantly widening vision which keeps pace with her husband and her children in their more constant contacts with the business and educational world; and the homemaker who would serve well in this capacity should not allow herself to slacken.

Only by a careful evaluation of essentials and non-essentials in the business of homemaking, can woman maintain her greatest power. It was one of our New England mothers who said that she would rather have a little dust on the table than to have it on her brain!

The homemaker should aim to maintain her perspective, and to keep herself young in body and spirit if she would serve her country best in the guidance of the youth in her home. She should at all times be a

part of the world and its life if she would command the respect of the members of her family for her wisdom and guidance.

The importance of participation by the homemaker in the activities of church, club, and community organizations is obvious. She needs these contracts in order to keep herself most effective as a guiding factor in her home group; and as a means of maintaining a social consciousness which serves to link her home to the larger whole. When evaluated in terms, then, not only of immediate comfort and service to the members of the family group, but also as a constant contribution to the progress of civilization, the manifold activities of the home assume a more interesting rôle.

The share of the homemaker in the great movement for better health in the nation, and hence more effective service, can hardly be defined. Woman as consumer purchases health (or a lack of it) for the members of her immediate household; and indirectly, through her demand for clean, wholesome food and clothing products, she creates a supply of commodities which are available for the less intelligent homemaker who, because of lack of knowledge, is indifferent to the scope of variation in purchasable products. Woman as purchaser is in a position to affect labor conditions in the industries. The homemaker who refuses the product of sweatshop labor will, when her power increases through numbers, be influential in improving industrial conditions. Through the intelligent use of her vote, woman may wield an even greater influence in demanding better working conditions for men, women, and children.

The relationship of home and community hygiene to the welfare of the nation makes its imprint upon the lives of individuals as units in the larger social whole. Cleanliness is not maintained without effort. The silent influence of the good housekeeper, surrounded by neighbors from other lands who are eager to learn American ways, is a potent factor in the great work of Americanization. The simple house furnishings, the spotless window curtains, the well-laundered clothing, the careful ventilation, and the well-ordered household activities of the American homemaker will serve as a guide in helping the foreign housewife who observes them to adapt her methods of living to those of her foster homeland.

Woman plays an important part, in her business of homemaking, in contributing to the creation and maintenance within her own family group of a clear and well-defined body of principles of right living and right thinking. Home ideals—those subtle standards for the promo-

tion of the most advantageous human relationships—are basic in their influence upon the interrelations of the citizenry of the nation. Whether it be as the wife and mother in the individual home, or as the homemaker in an institutional home—a refuge for orphan children or for the aged, or a communal home where business men and women find their permanent or temporary respite from the complexity of daily life—the homemaker of vision may serve her country along these lines of activity.

The love of home and family is inherent in most women. The realization of her opportunity for wider service through the exercise of her utmost powers as homemaker is creating in woman a desire for adequate preparation for that service. The life of the homemaker presents many problems of adjustment. It makes an infinite number of demands upon women, many of whom are inherently better adapted to other types of activity and service. The world is in a process of change in relation to woman's contribution to society. The press is offering a vast number of contributions to the whole discussion. Women are at work on their own problem, and are solving individual cases in ways more or less satisfactory to them and their own families.

To society at large goes out the challenge to equip women to enter this enlarged sphere of world homemaking, not at the expense of the individual home which is proclaimed to be the "chief spring of social and civic virtue," but with an education adequate to the needs. Such an education must be liberal in every sense of the word; the girl must be trained *to do, to think, to vision, and to sense human needs*. Is American higher education training girlhood for its full responsibilities in citizenship?

"What is a budget?"

"Well, it is a method of worrying before you spend instead of afterward."

—*Boston Traveler*.

EDITORIAL

National Thrift Week begins January 17th. The national feature days are as follows:

- J 17—Thrift Day—Benjamin Franklin's Birthday
- A 18—Budget Day
- N 19—Life Insurance Day
- U 20—Own Your Home Day
- A 21—Pay Your Bills Promptly Day
- R 22—Share with Others Day
- Y 23—Make a Will Day

The Home Economics Association is cooperating with the Y. M. C. A. in this Thrift campaign, and every member should approve and endorse the Prosperity Platform. This platform has ten planks: Work and Earn, Make a Will, Record all Expenditures, Have a Bank Account, Carry Life Insurance, Own Your Own Home, Make Your Will, Pay Your Bills Promptly, Invest in Safe Securities, Share with Others.

The Sources of the Family Income. "Where does the money go?" is the common cry, hence our schedules of expenditure, our balancing of accounts; but "Where does it come from?" is considered a very simple question, to be answered by the figures on the payroll or the contents of the pay envelope.

True, the money brought in by the money earners of a family must always form the solid background of the financial plan, but there are other sources of income which we do well to consider as such, and to rightly estimate. They may make all the difference between smiling comfort and gray visaged want.

Take, as illustration, a case that may come within the observation of any of us, the spending of a \$3000 income by an individual or by a family. A young business man receiving this salary, has in hand a sum larger than that held by nine-tenths of the families of our country. If told this little fact as shown by the census, he says in wonder "How do they manage it?" for he finds it difficult to add much to his savings account or perhaps has given up the attempt altogether. Thanks to the rosy hopefulness of youth he may marry without being able to prove

in black and white that the move is a wise one, and yet it may be the most sensible step he has ever taken.

"Two can live on the same money as one," is an old saying, true or false as it is modified by certain important factors. If true, the fore-going generation must have given their children a good start in life through education and training and something placed in the savings bank; the wife is to be regarded as an asset, not a burden, capable through her good health and skill of making a substantial contribution in the form of housekeeping activities; and the community will provide help in education, recreation, and many other ways. These are the three requirements, made by Mrs. Abel in her book, *Successful Family Life on the Moderate Income*, to be added to the man's earnings in order that the venture may not fail on the financial side. And all three must be looked on as sources of income. If thus considered, the average family is much better off than we are apt to think.

Now how does our young bachelor spend his money? He is, we will say, a stranger in a city and without family backing. He must find his own friends and look after his own amusements. He takes a room on a good street and eats at a restaurant, or he takes his dinners at a good boarding house, at \$1.00 each, and eats his other meals near his place of business. For this room and board he pays \$20.00 a week, and here goes one third of his income. He could do somewhat better but in general he does not.

The secret of his apparent extravagance lies in his pleasures. He must have friends. If through his church or other connections he becomes acquainted with families in which there are young ladies, he must in some way return the hospitality he receives. This is a pleasure loving age and the girls of these families are accustomed to go out two or three evenings a week. For good seats for the play or concert he will spend some \$10.00 a week, and if the night prove stormy he must provide a taxi. To this will be added entrance fees to ball games and the like. Then the pet charities of his friends take a heavy toll. Watch a popular young man at a church fair! He is fair game! Is he not a bachelor with no one dependent on him? These outgoes, together with his summer vacation, will take another thousand. Clothing comes next, with laundry and its destruction of unmended socks and shirts. Next, the many incidentals, so that a \$400 or \$500 savings account is the most we can hope for at the end. Now if this young man marries, the rent of the furnished bachelor quarters will pay for the unfurnished housekeeping apartment to be furnished by the bride, the cost of res-

restaurant food covers the raw materials for her skilled fingers to work up, the clothing receives proper care, the cost of pleasure in public places is sharply cut, for the home is now the center of social life and happiness, and the community comes to their help with free libraries, museums, music, parks, and play grounds.

The wife of the wage earner or common laborer in her capacity of housekeeper and caretaker of children has been estimated to double her husband's earnings, and the same could probably be proved true of the wife of the man of larger income if her services to a household of higher standards is paid for at the ruling rates.

The housewife's services as a source of family income are thus seen to be a substantial factor, and in many cases it will be difficult for her to earn as much outside the home. But her attitude to the home must be one of helpfulness and sacrifice, and her health and training must be of the best.

The community as a source of income also makes a substantial showing and this source is to be greatly increased when the individual voter awakes to study the way the taxes are spent and requires that what is now wasted by inefficient public servants shall go to provide better schools, better inspection and distribution of food, lower priced transportation, and good low priced hospitals.

These three accessory sources of income are no less important in financing a family with children. Is it not the duty of home economics forces to help make effective these three sources of family income to supplement the bread winner's efforts? "Saving, training, and public honesty" might well be the slogan.

The "Maternity Bill." On the day before Thanksgiving, President Harding signed the "Maternity Bill," providing for Federal cooperation with the States in promoting the welfare of maternity and infancy. After more than three years of struggle, the bill was passed by both houses of Congress by overwhelming votes. The Children's Bureau of the U. S. Department of Labor is given the administration of the act, and the Chief of the Children's Bureau is made the executive officer. A Board of Maternity and Infant Hygiene, consisting of the Chief of the Children's Bureau, the Surgeon-General of the U. S. Public Health Service, and the United States Commissioner of Education, is given certain powers of review and approval. A total appropriation of \$1,480,000 is authorized for the current fiscal year, and an appropriation of \$1,240,000 for each of five years thereafter. Except for a very

small percentage to be used for administrative purposes, the money is to be divided among the States accepting the provisions of the act, to be used, together with State funds, for promoting the welfare and hygiene of maternity and infancy.

So eagerly was the passage of this bill awaited that at least six states in the 1921 sessions of their legislatures passed laws accepting the Act, if it should become a law, and authorizing a state board or division to cooperate with the Federal Government. These states include Delaware, Minnesota, New Hampshire, New Mexico, Pennsylvania, and South Dakota. The rest of the states will not have to wait until the next regular session of their legislatures, for the law provides that, if the legislature has not acted, the governor may, in so far as the laws of his state permit, accept the provisions of the Act and authorize a state agency to cooperate with the Children's Bureau until the legislature has had opportunity to act. More than 30 states have child welfare or child hygiene divisions in their State Boards of Health, and in these states the law provides that its administration shall be in the hands of these divisions. Any state desiring to benefit from the Act must submit to the Children's Bureau detailed plans for its administration, and these plans are subject to approval of the Federal Board of Maternity and Infant Hygiene.

How much money will a state accepting the act receive from the Federal Government to be used in making maternity and infancy more safe? In the first place, \$10,000 the first year, and \$5,000 a year thereafter will be paid each state indicating its desire to cooperate. An additional \$5,000 will be paid, providing the state appropriates \$5,000 of its own for the same purpose. That makes a total of \$15,000 the first year and \$10,000 a year for each year thereafter available from Federal funds to each state regardless of its size. In addition \$710,000 a year is provided to be distributed among the states on the basis of population, providing the amounts thus apportioned are matched by state appropriations.

This Act is a challenge to all state home economics associations. Here is a definite opportunity to support in your state a vital piece of social legislation. Get in touch, through your child welfare and legislative committees, with the plans of all other organizations interested in this law, and work earnestly together that your state may participate in the provisions of the Act.

Jen L. Cox died at her home in Wichita, Kansas, November 15, 1921, after an illness of a year. Failing health had taken her to

California two years previously, From 1913-1919 she was instructor and assistant professor in the Department of Domestic Science at Kansas State Agricultural College. During the second semester of 1917-18, while on leave of absence, she was professor of domestic science at the Utah Agricultural College. Through her death home economics loses a forceful teacher and one who represented the type of womanhood for which the profession stands.

Food Advertising. It is difficult even for the food expert not to be bewildered by the array of glowing advertisements which proclaim from magazine, bill-board, and shop window the incalculable and, one would think, hitherto unrecognized merits of our old friends. Almost none of these loudly heralded foods are strangers; the consuming public merely seems not to have eaten enough of them in the past.

The public without asking for it at all has been given a week in which to eat prunes, a week for consuming canned foods, a week for partaking of rice, and in the meantime is urged, in addition, to eat more yeast, peanuts, raisins, olives, oleomargarin and almost every food imaginable. The accompanying literature gives reasons why we should "eat more," some of which are sound, some of which are sound but exaggerated in a misleading fashion, and others of which are only the products of somebody's imagination. A discussion of the merits of each of these foods is not the purpose of this article, but home economics should not fail to recognize worth where it exists and should continue to teach discrimination based upon sound knowledge of cost and nutritive value.

Both the home economics and the medical professions have considerable responsibility for the saneness of such campaigns, as dietitians, physicians, and home economics texts are quoted freely. How much influence the teaching of home economics may have upon the eating habits of the consuming public is emphasized by a recent inquiry made by the Livestock Marketing Committee of Fifteen into the causes for the decrease in beef consumption. Between the years 1907 and 1920 the consumption of beef declined from 79.9 pounds per capita to 56.4 pounds. There is a feeling that the importance given to meat substitutes in college courses and especially in extension work may be one factor contributing to this decline.¹

The saneness of moderation will probably carry Mr. Average Man over such campaigns with no undue digestive or nutritional disorders. Luckily he is learning more and more every day about foods, their composition, and nutritive value. The fact that he is interested and ready to learn has given the "eat more" campaigns their incipency.

¹ Unpublished correspondence.

BOOKS AND LITERATURE

The Vitamine Manual. By WALTER H. EDDY. Baltimore: Williams & Wilkins Company, 1921, pp. 121. \$2.50.

Dr. Eddy's new *Vitamine Manual* will be received with much satisfaction by home economics workers. It is a very readable and interesting account of the subject, delightfully written in sufficiently non-technical language to be comprehensible by those who are not themselves well versed in vitamine research; and yet it is full of material of value to those who wish to apply vitamine knowledge to human feeding and those who are doing experimental rat work. The book begins with an historical chapter, "How Vitamines were Discovered," which describes briefly the early work of Eijkman, Hopkins, Funk, Osborne and Mendel, McCollum and others, and makes the reader grasp the surprising fact that the term which we all use so glibly is just ten years old. Other chapters are on "The Attempts to Determine the Chemical Nature of a Vitamine," "Methods used in Testing for Vitamines," "The Sources of Vitamines," "How to Utilize the Vitamines in the Diet," "The Chemical and Physiological Properties of the Vitamines." In the latter chapter Eddy includes a brief account of his own and Daniels and Byfield's successful results on feeding extra "B" to infants, and Karr's work on stimulating the appetites of dogs by "B."

The description of methods includes tables of the rat diets used by different investigators—a very convenient help to students developing rat feeding experiments. Much use, too, will be made by home economics teachers and students of the extensive tables on Sources of Vitamines. These list a large number of foodstuffs with a series of plus signs indicating their relative content of "A," "B," and "C." Of course all such

tables have the weakness that they are too definite and do not bring out sufficiently clearly that the content of "C" in particular varies greatly with the way the food is prepared for the table. Nevertheless, they are a useful graphic method of presenting a large mass of material.

The book closes with a 28 page bibliography on vitamins and related topics.

On the whole this is a very useful and stimulating book.

KATHARINE BLUNT,
The University of Chicago.

New Homes for Old. By SOPHONISBA P. BRECKINRIDGE, Professor of Social Economy, University of Chicago. New York: Harper and Brothers, 1921, pp. 356. \$2.50.

Miss Breckinridge's new book is one of a series of Americanization Studies written under the direction of Mr. Allen T. Burns, assisted by an editorial committee, and financed by the Carnegie Corporation of New York. The purpose of the book is "to help in the adjustment of immigrant family life in this country" by exhibiting the serious difficulties encountered by foreign-born families in attaining such satisfaction in their family relationships "as would constitute a genuine feeling of hominess, and make the immigrant home an integral part of the domestic development in this country." The value of the book is greatly enhanced by the helpful suggestions contained in the last three chapters concerning effective methods of introducing the immigrant family to specialists' standards of living.

The loss to the community, in permitting many of the difficulties met with by immigrant families to remain, is very real, although not clearly perceived by the majority of well-meaning and intelligent people. After

reading the opening chapters of Miss Breckinridge's book, which portray the obstacles in the path of immigrant homemakers in our land, the reader, informed perhaps for the first time, is tempted to echo the saying that "there is in America, at first, nothing for the immigrant but the shovel." Very clearly the author describes the bewilderment of the immigrants after landing in a totally strange land, and their difficulties in adapting themselves to the housing and food conditions, the household furnishings and utensils, the different style of dress, the strange money system of America. In many instances these new-comers have lived in rural districts and are familiar with the economic system of payment in kind and not in money. Landed in our midst with few agencies to help them in acquiring American standards with respect to family relationships, household sanitation, personal hygiene and a score of other matters, the members of immigrant families struggle unaided with their problems; and years, if not a life-time, are required to make satisfactory adjustments to life in the new country. Attempts to eke out a meagre income, by filling the home with lodgers or by sending out mothers to work and employing children out of school hours, add enormously to the difficulties of adjustment.

The wastefulness of a system that leaves the instruction of immigrant parents in the essentials of wholesome family life largely to chance is pointed out again and again throughout the book. Not content with this, however, the author goes on to consider what existing agencies could be expanded and utilized for giving this much-needed instruction and practical help. An illuminating chapter is devoted to describing the local benefit societies and national organizations which have been established by the foreign-born peoples themselves, not alone as mutual aid societies but as agencies of education in American customs and ideals. Consultations with representatives of these organizations of the foreign-born have led the author to believe that if they could be brought in touch with the work of existing social agencies, which could make available for their use the material on household

management, food values, and care of children, "a fine and fruitful cooperation" among these associations could be brought about.

In the final chapters of the book the existing agencies of adjustment are briefly described. The valuable work done by the Immigrants' Protective League, Settlement Classes, International Institutes, and Recreational Agencies is set forth and suggestions are made for the expansion and improvement of their services. Especially does Miss Breckinridge advocate the encouragement of promising young women, from the foreign-born groups, to qualify as home teachers and as classroom and extension instructors in household problems, child care, hygiene, and sanitation. The education of these young women by means of scholarships, together with a finer cooperation between American social agencies and those of the foreign-born would do much to effect those difficult adjustments of our immigrant groups to American standards of living without which "Americanization" in any but a superficial sense can never be accomplished.

New Homes for Old is, then, a painstaking and much-needed study of the obstacles in the way of the assimilation of foreign-born groups which have too long obstructed the path to progress. It is a challenge, not alone to social workers, but to all intelligent and socially minded men and women to lend their efforts toward furthering every well-considered plan for inducting our immigrant neighbors into the more wholesome aspects of American family life.

WILLYSTINE GOODSSELL,

Teachers College, Columbia University.

Food Products—Their Source, Chemistry and Use. By E. H. S. BAILEY, Professor of Chemistry, University of Kansas. Philadelphia: P. Blakiston's Son and Co., 2nd Ed., Rev., 1921, pp. 551. \$2.50.

The second edition of this book contains many new illustrations and additions which have brought the subject matter up to date, thereby adding to the reference library of the student a book which offers in readable form much valuable information regarding

foods. Especially have the chapters on Brewing and Distillation in the United States, Animal and Vegetable Oils, Nuts, Cereals and Cereal Products, been revised. A valuable appendix has been added containing some of the important food legislation, tables of chemical composition of food materials, tables showing the chemical composition of meats and fuel value per pound, a table of common food values, classification of foods according to total nutrients, digestibility of meat, and a list of some American commercial food products such as covo, troco, postum, and others.

A preliminary chapter on the sources and constituents of foods is given, and this is followed by discussions of cereals, sugars, alcoholic beverages, vegetables, fruits, nuts, mushrooms, animal and vegetable oils, meats, fish, milk and dairy products, eggs, spices, and non-intoxicating beverages. The author has laid emphasis upon the source, manufacture, history, composition, cooking, nutritive value, use in diet, digestibility, and adulteration of the different products.

Unfortunately, in many places there seems to be an indiscriminate use of words which might be misleading to the student reader. Examples of this may be found on p. 122 where the heading of a paragraph is "Glucose (*Fruit Sugar*)" and in this paragraph is the expression "*Fruit* or grape sugar." In other places we find the following: "Heat *and* energy" and "In order to be *fully* digested, oatmeal should be cooked longer than the thirty to forty minutes usually suggested."

The subject of "Planning the Diet," p. 25, is so inadequately presented in one paragraph that it might better have been omitted. Vitamines also are inadequately and sparingly discussed. Water soluble C is not mentioned.

The reviewer is of the opinion that this book will serve better as a reference than as a text, and that for the student the tables giving food analyses and references to original records, bulletins, and books, will be of particular interest.

ALICE M. CHILD,
University of Minnesota.

Producing Amateur Entertainments. By HELEN FERRIS. New York: E. P. Dutton Company, 1921, pp. 266. \$2.50.

Producing Amateur Entertainments is a careful compilation of social experience in the use of recreation material for amateur dramatics. Special mention is made in the book of exhibitions whose subject is recreation or education in which millinery, cooking, and similar subjects may be introduced. In nutrition or other health work the pantomime of class work or the specialty acts may be valuable to home economics workers both in the classroom and in the extension service. As the author has suggested, "the teaching value of such material depends largely on good interpretations."

There is no doubt that this book will accomplish the aim of the author, for she tells us that she hopes that her book "will help to perform better those desirable activities that are likely to be performed" and "to reveal higher types of activity, making these latter both desirable and possible."

Producing Amateur Entertainments offers suggestions to all who are interested in home economics work and who realize that the use of the recreation material in this work is an art and one which could be studied to the advantage of the whole home economics movement.

CLYDE B. SCHUMAN.

Atlantic Division, American Red Cross.

Jack O'Health and Peg O'Joy. Prepared by the New York Tuberculosis Association. New York: Charles Scribner's Sons. 60 cents.

This book, prepared for distribution among the children of the public schools of New York City, has been endorsed by the New York Department of Education, The National Child Health Council, The Health Service of the American Red Cross, and other health organizations. The story is based on the hygiene syllabus in use in our schools and has been prepared in close cooperation with the Department of Education. It is now on the list of books recommended to the teachers and will be used as a supplementary reader by the children. All nutri-

tion workers and others interested in child welfare will find this little fairy story of value in teaching health to children.

Cost of Living. Data on price changes, wholesale and retail, of important food articles in cities in the U. S. and in foreign countries are presented in each number of the *Monthly Labor Review*.

A curve published in the *Annalist*, September 19, 1920, representing these changes, shows the peak of high food prices in June 1920, with a fluctuating decline to the lowest point, June 1921, and a gradual rise to September.

The *Industrial News Survey*, October 8 and November 19, 1921, gives the following statements:

U. S. Bureau of Labor Statistics report of cost of 43 food articles, in 51 important cities, shows that between September 15, 1921, and October 15, 1921, there was a decrease of 3% in the average cost. For the year ended October 15, 1921, the decrease for all articles combined was 23%. Wholesale prices declined a little more than 1% during October. Farm products showed a net decline for the first time since June. House furnishings, cloth, and apparel also showed declines.

U. S. Bureau of Agriculture reports production of principal crops in U. S. as estimated September 1, 1921, in comparison with latest five-year average, as: winter wheat, 123; spring wheat, 86; corn, 118; oats, 96;

barley, 92; rye, 184; rice, 137; cotton, 54; potatoes, 91; apples, 61; hay, 121; tobacco, 95.

The Coal Fire. A research by MARGARET WHITE FISHENDEN for the Fuel Research Board of the British Government. Published by His Majesty's Stationery Office for the Department of Scientific and Industrial Research, Imperial House, Kingsway, London, W. C. 2, pp. 107. Price 4 shillings net.

This pamphlet gives the results of tests that are of great interest to the home, and brings out the efficiencies of various types of domestic coal fires. The pamphlet can be secured from any book seller.

Domestic Fuel Consumption. By A. H. BARKER of the University of London. Published by Constable & Company Ltd., 10 Orange Street, Leicester Square W. C., London, pp. 159.

This book gives much valuable information on the use of fuel in the home. It is especially valuable on detailed discussion of the hygiene of heating.

A Monograph on Vitamines, which is being prepared by Dr. H. C. Sherman, will be published by the American Chemical Society as one of its regular series of monographs. This monograph, of particular interest to all persons interested in nutrition, will appear early in the year.

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NEWS FROM THE FIELD

The National Home Economics Convention. One of the most important coming events for home economics women is The Fifteenth Annual Meeting of The American Home Economics Association to be held at Corvallis, Oregon, July 3-8, 1922. The location of this convention is such as to enable those in attendance to combine business with pleasure in an unusual manner.

The program alone promises to be most enticing to progressive home economics women. In addition, some exceptional forms of entertainment are being developed. One of the features will be the day's entertainment offered by the President's Council of Portland's Business and Civic Clubs on July 1. This will be a drive around the city of Portland and up the incomparable Columbia River Highway, with an outdoor breakfast or lunch along the highway, and dinner in one of the attractive hotels.

The following description of the Highway, written by Walter Prichard Eaton, appeared in the magazine section of the *New York Times*.

"From The Dalles to Portland a distance of something under a hundred miles, the Columbia Highway goes beside the river through the magnificent gorge the stream has carved through the basalt of the Cascade range. It is hung on the outer rim of headland precipices, it climbs to the top of them and gives you a view of the river for miles and miles, of the green water and the blue headlands, it cuts through arched tunnels where each arch frames a picture, it crosses ravines on attractive concrete bridges, it passes by waterfalls which spray down from the cliffs above, it cuts in back through the groves of fir.

We have heard a lot in the east about the Colombia highway and all of it is true. It is the finest scenic drive in the world without any question."

Information in regard to routes will appear in the next issue of the JOURNAL.

Home Economics at Constantinople College. The schedule of courses outlined below is taken from the 1921-22 calendar of the American College for Girls at Constantinople and shows the work which Mrs. Norton has organized for the present college year. As will be seen, textiles and clothing are the only important line of home economics not covered either by Mrs. Norton's courses or by those from other correlated departments. No news has yet reached this country as to the number of students registered for home economics, but the officers of the College in New York feel sure that the success of the work will repay the American Home Economics Association for its generosity in establishing the new department.

HOME ECONOMICS

Professor Norton

In all courses in this department two periods of laboratory work are counted for one hour of credit.

I. General Course. An Introductory Study of the Home. Professor Norton.

Household problems of food, clothing, shelter. The household budget. The care of children. The place of the home in society and its relation to the community. Open to Sophomores. Three hours throughout the year. Grade I. Credit hours 6.

II. Food and Diet. Professor Norton.

Food materials, their composition and nutritive value. Choosing the daily food. Adaptation of diet to climate and varying conditions. Open to Juniors and Seniors.

Pre-requisites: Physics I, Biology I, Chemistry I. Two hours lecture, two hours laboratory throughout the first semester. Grade II. Credit hours 3.

III. The Preparation of Food. Professor Norton.

The principles of cookery. Preparation of typical dishes. Comparison of national customs.

Pre-requisites: Course II, or Course I, Physics I, Chemistry, Biology I. One hour lecture, four hours laboratory throughout the second semester. Grade II. Credit hours 3.

IV. Chemistry of Foods. (Chemistry I'). Professor Hall.

Food analysis, qualitative and quantitative.

Pre-requisites: Course II and Chemistry II & III. One hour lecture, four hours laboratory throughout the year. Grade III. Credit hours 6.

V. Physiology and Hygiene. (Biology IV). Professor Cook.

The anatomy and the physiology of the human body. The principles of personal, home, and municipal hygiene. Open to all students. Two hours lecture, two hours laboratory throughout the year. Grade II. Credit hours 6.

VI. The Family. (Sociology II). Associate-Professor Jenison.

A study of the normal family and its functions; the causes of broken homes, and the remedies proposed.

Pre-requisites: Course I and General Sociology. Three hours throughout the year. Grade III. Credit hours 6.

VII. The Economics of Consumption. (Sociology IV). Associate-Professor Jenison.

The principles of economics with especial application to the home. The household as consumer. The responsibility of the household for economic conditions.

Pre-requisites: Course I and Economics. Three hours throughout the second semester. Grade III. Credit hours 3.

VIII. Household Accounting. Mrs. Briggle.

The business of the household. Household records and accounts.

Pre-requisite: Course I. Two laboratory hours throughout the second semester. Grade I. Credit hour 1.

IX. Textiles and Clothing.

Textile materials and their selection, use, and care. The making of garments.

Pre-requisites: Chemistry I, Physics I. Two hours lectures, four hours laboratory throughout the first semester. Grade II. Credit hours 3. (Not offered in 1921-22.)

X. Textiles and Clothing.

Designing and making of garments. Further study of textile materials. The economics of clothing.

Pre-requisite: Course IX. Two hours a week throughout the second semester. Grade II. Credit hours 3. (Not offered in 1921-22.)

XI. Household Art. (Practical Art II). Miss Campbell.

Design, composition and color as related to the house and to dress.

Pre-requisites: Courses I, or IX and X, and elementary drawing.

Four hours of laboratory throughout the year. Grade II. Credit hours 4.

XII. Household Management. Professor Norton.

The practical administration of a household, including a study of house sanitation, the water supply, plumbing, heating, and ventilation. Open to Juniors and Seniors.

Pre-requisites: Course I with Physics and Chemistry, or Course II.

Three hours a week throughout the first semester. Grade II. Credit hours 3.

XIII. The Care of Children. Professor Norton.

Infant hygiene. Food for the school child. The training of children. Open to Juniors and Seniors.

Pre-requisites: Course X or Courses I and II. Two hours lecture, two hours laboratory throughout the second semester. Grade III. Credit hours 3.

XIV. Educational Literary Survey. (English XVI and Education II). Professor Kinney.

Illinois Home Economics Association. Home economics women in Illinois have been urging for several years the formation of a strong state association to take the place of the various sections which have met from time to time with allied societies. The new plan for regional organization in the American Home Economics Association made such a step especially desirable at this time, and accordingly a call for an organization meeting was sent out early in the fall.

The opening session was held at the Art Institute in Chicago, Friday evening, October twenty-first. Following a dinner, an enthusiastic gathering of over three hundred women voted to constitute themselves the Illinois Home Economics Association and to seek affiliation with the national society. The association was most happy in having Miss Sweeny as guest of honor and she opened the meeting with a stirring address. Dean Marion Talbot of the University of Chicago sounded a challenge to definiteness of purpose and action, and representatives of various phases of home economics activities spoke of the value of a state organization to the groups to which they belong.

The meetings on Saturday were held at the University of Chicago. The speakers at the general session in the morning were Margaret Sawyer of the American Red Cross and Maud Brown of the Elizabeth McCormick Memorial Fund. At the business meeting which followed, a constitution was adopted, officers were elected, and plans of work for the coming year were discussed. After luncheon at Ida Noyes Hall, time was given for inspection of that beautiful building and its equipment, for visits to exhibits in the Home Economics Department, and for witnessing a test of basal metabolism with the apparatus in use there.

The program for the afternoon provided for sections which met to organize for work and to discuss the problems of teaching in its various branches, of home-making, and of extension, institution, and social work. Each of these sections reported worth-while programs with a hopeful outlook for the future. One of the noteworthy and encouraging aspects of the whole meeting was the

response from all the groups who have a common interest in the objects of the association.

The discussion of possible lines of work to be undertaken this year narrowed itself into three fields—the nutrition of children, a survey of home activities, and the use of tests in teaching. Each person who joined was asked to indicate the topic in which she was most interested, and state-wide committees are being formed to carry on the work.

The officers elected at this meeting are: President, Dr. Katherine Blunt of the University of Chicago; vice presidents, Ruth Wardall of the University of Illinois, and Mrs. John C. Hessler of Galesburg; treasurer, Alice Treganza of Bloomington; secretary, Frances L. Swain of the Chicago Normal College.

The Meeting of the Home Economics Section of the Arkansas Education Association on November 10, 1921, was attended by 150 home economics teachers. The subjects presented were as follows: Activities of the Home Economics Section, Stella Palmer; Social Hygiene, Marcella Arthur, Field Lecturer, State Board of Health; Problems in Home Management that Should be Taught in the School, Rowena Schmidt, University of Arkansas; Home Projects, Margaret Gregg and Mrs. G. S. Boggan.

After the luncheon in the Blue Dragon Cafeteria, there was an open discussion on "Part-time Classes" and "Home Economics Equipment." The Scholarship Committee reported \$175 on hand, and one girl sent through summer school.

The Texas Home Economics Association, which is also The Home Economics Section of the State Teachers' Association, met in annual session on Friday, November 25, in Dallas, Texas. The following program was given, Joan Hamilton, College of Industrial Arts, Denton, presiding: Affiliation with the American Home Economics Association, Bess Heflin, University of Texas; Vocational Aims and Methods in Home Economics Education, Dr. C. A. Prosser, Dunwoodie Institute; Home Projects, Genevieve Fisher, Federal Board for Vocational Education. Discussion: What entrance credit can be

given in colleges and universities for high school home economics work?—Miss Kent, Beaumont; Miss McFarlane, Denton; Miss Spencer, Dallas; Miss Lacey, University of Texas.

At the annual meeting of the Texas State Teacher's Association in November, 1920, the four vocational sections, (agriculture, commercial, home economics, trade and industrial) federated into the Vocational Section. At the meeting, November, 1921, this vocational section became a State organization affiliated with the National Society for Vocational Education.

The Philadelphia Home Economics Association at its October meeting was addressed by Mrs. Henrietta Calvin who spoke on the present need and trend of home economics education. She urged that all undergraduate college curricula should include equal work in clothing and foods, and that they should further include courses in philosophy, sociology, and economics.

Clara Pancake of the Philadelphia Normal School is president of the association.

Home Economics Section, Central Ohio Teachers' Association. About 125 were in attendance at the yearly meeting at Dayton, November 4, 1921. The following program was presented, Frances M. Gregory of Steele High School presiding: Home Economics in the Future, Mrs. Henrietta Calvin; Round Table discussions—What can the home economics teacher do for the malnourished child? Leader, Katherine May Hardy, Supervisor of Home Economics, Dayton; How can we emphasize practical skills in teaching Household Arts? Leader, Julia E. Turner, Home Economics Department, Antioch College; In what ways are we solving the problems of teaching foods in rural schools? Leader, Marcella Payne, Home Demonstration Agent, Montgomery County; How can we help to forward the plans of the American Home Economics Association? Leader, Louise M. Dornbusch, Stivers High School, Dayton.

At the business meeting, following the program, resolutions were passed, to be forwarded to Washington, endorsing the Shep-

pard-Towner bill, and favoring disarmament. Edith Gramm of Columbus was elected chairman, and Alice Siebler of Dayton, secretary, for the 1922 meeting.

A luncheon was held at the Dayton Women's Club, in honor of Mrs. Calvin. A reception and tea followed the meeting, and Mrs. Calvin was guest of honor at a dinner, at The Shrine Club, given by a group of institutional and other home economics workers.

Home Economics Section, Northwestern Ohio Teachers' Association. A large number of home economics teachers gathered at a luncheon in the Lasalle Koch Tea Rooms in Toledo on October 28, 1921. They were addressed by Mrs. Maude Gregory Adams, Professor of Teacher Training in Home Economics. Her subject was Modern Methods of Teaching Home Economics. Mrs. Berman, manager of the Lasalle and Koch Tea Rooms, then talked on interesting phases of Tea Room Management, and the need of home economics trained women as assistants. The guests made a visit of inspection through the kitchens and work rooms.

At the short business session it was voted to form the group into a permanent organization which might be of help and strength to the State Home Economics Association and to the home economics work in the northwestern section of Ohio. Mrs. Harriet Weeks, Supervisor of Home Economics in the Public Schools of Toledo, was chairman of the meeting, and Miss Laura Heston, of Bowling Green Normal, Secretary. A committee was appointed to draw up a constitution and by-laws for the permanent organization.

The Home Economics Section of the Southwestern Ohio Teachers' Association met October 28, at East High School, Cincinnati. The program was as follows: Teaching the Value of Hygienic, Artistic, Suitable Dress to High School Girls, Jessie Jackson and Bluma Franklin; Teaching Child Care and Personal Hygiene, Florine Vatter, Director of Smith-Hughes Work at East High School; Getting Over Food Facts

and Habits, Julia Johnson; Arousing the Interest of the Student in the High School Lunch, Miss Swischer, Miami University; The Part of the Home Economics Teacher in Training for Wholesome Womanhood, Mrs. Norma Selbert, Professor of Public Health and Sanitation, Ohio State University.

As an illustration of arousing interest among younger children, pupils presented three playlets: "Teaching Mothers How to Dress Baby"; "Buying an Outfit for Mary, or the Fashion Show"; "Who Triumphs—King Coffee or King Milk?" Topics discussed were: the use of illustrative material, sources of such material, the possibility of having girls of the seventh grade help in teaching food facts to the younger pupils, and the essential vitality of the work today.

The program and discussion stressed the importance of adaptation of subject matter to the students taught, not only what is taught but the methods employed in making it of value to the children.

Vocational Home Economics Teachers met in Denton, Texas, November 21-23. Each vocational home economics teacher was introduced to the conference group and given from one to three minutes to interest the others in her department. They were then taken for a tour of the College of Industrial Arts and were welcomed to the college by Dean E. V. White. The papers and discussions that followed included Home Projects, The Clothing Course, Teacher-Training, Relating the Art Work to Homemaking, Home Nursing, Nutrition Work in the Schools, and Home Management. Round Tables gave a choice of topics: note books, school lunch, physiology, affiliation, school program, report blanks, textbooks, reference books, illustrative material, equipment.

There are about 45 vocational home economics teachers in the all day schools of Texas.

University of Nevada. Beginning with this year, all girls enrolled in the Normal course are required to take one course in the Home Economics Department. This course

attempts to give them a survey of the opportunities for social service in rural communities and some practical suggestions for meeting them. With this in mind, short units are being offered in home nursing and first aid, renovation and remodelling of clothes, children's clothes, textiles from the consumers standpoint, boys and girls club work, including camp cookery, school lunches, child care, sanitation, and home decoration.

Vocational High Schools in Nevada offer a two year's course in homemaking, and, due to the small size of the schools, it is only possible to schedule one class a day, to which students from all four years are admitted. This necessitates offering the work in two units of a year each, neither being prerequisite to the other. The vocational home economics teachers of the state have made the perfection of such a course one of their problems for the year. Any suggestions from other states that have had to deal with this same problem will be gratefully received by the State Supervisor, University of Nevada, Reno.

Fellowships. Applications for the fellowships in the Departments of Household Administration and Home Economics of the University of Chicago for the year 1922-23 should be addressed to the Deans of the Graduate Schools of Arts, Literature, and Science, and should be in their hands on or before March first. Detailed information can be secured in advance by addressing the Deans.

Elizabeth W. Miller, now professor of Home Economics at Ames, who received her doctor's degree last August, was the latest holder of one of these fellowships.

In addition to these general university fellowships, two special fellowships in Home Economics, awarded for the past three years at the University of Chicago, are offered again next year. They carry \$300 each and tuition. Applications, with recommendations and statement of training and experience, should be sent to the Chairman of the Department of Home Economics

or to the Dean of the Graduate Schools, before April 15, 1922.

The successful candidate is expected to do research in some one line of home economics—nutrition, food chemistry and experimental cooking, textiles, home management, home economics education—and at the same time to take courses in her chosen field. The work is planned to count toward the master's or doctor's degree.

One of this year's fellows is Kate Duam who received her bachelor's and master's degrees from the University of Kansas. She has taught at Indiana University, University of Montana and University of Kansas, and has spent a short time in the Experimental Kitchen of the Office of Home Economics in Washington. The other is Ruth Cowan who holds the University of Chicago bachelor's degree and has taught at the University of Arkansas. Both of these women happen to be working in nutrition.

Adah Hess, one of last year's fellows in home economics education, is now acting Smith-Hughes supervisor for Illinois. Her thesis, still in preparation, is on tests in teaching clothing. (See paper by Trilling and Hess, in the *JOURNAL* for October 1921.) Marie Dye, the other fellow in 1920-21, now holds a fellowship at the Michael Reese Hospital, Chicago. A part of her doctor's thesis, *The Basal Metabolism of Women*, was published in the *Journal of Biological Chemistry*, June, 1921.

Food Forum at Teachers College.

At the request of some of the women of the city who were especially interested in weights and measures, the October meeting of the Food Forum was entirely given over to that subject.

An address was given by Mr. W. White, of the N. Y. Department of Farms and Markets, showing the responsibility of the housewife for what is really her own business, and telling of the help which the cooperation of the housewives can be to a state official who is trying to enforce honest weights and measures. No state can ever afford to hire a sufficiently large body of inspectors to prevent dishonesty. To check this evil

the housewife must help, both by careful attention to her purchases at the store, and by installing some weights and measures in her own home.

After the meeting there was an exhibit of good and bad types of household scales, and of faulty measures. The need for standardization of containers was shown by the numerous baskets now in use. The weights of large paper bags and wooden trays were pointed out, showing the justice of the housewife's demand that these should not be weighed with her purchases. The waste and shrinkage of meat were illustrated by roasts, steaks, and chops, as purchased, after cooking, and with the table discard. Other important points, such as including meat trimmings with purchases, were given especial attention at the meat exhibit.

A Creed For Elementary Cooking Teachers.

The New York City board of education has recently issued in pamphlet form a course of study and syllabus in cooking for use in the New York City elementary schools. The material is the result of much planning and work on the part of Grace Shermerhorn, Director of Cooking in the N. Y. public schools, and the cooking teachers of the city schools.

Doubtless nothing is more helpful in work than a statement of creed—the definite declaration of our aspirations and ideals—and this is done in the clear cut "Aims of Cooking in Elementary Schools" with which the syllabus is prefaced. A girl should know certain things at the end of the eighth year in school, and the things are listed. This list does not state merely the dishes which she should be able to prepare. She should also know of the relations of food habits and health, and should have standards for food for children, laundry work, and house-keeping, together with an appreciation of the home and home problems.

Everywhere the work of the school is vitalized. It is suggested that the teacher visit the homes of the children of at least one of her classes so that she may know the types of homes represented and their needs, and adapt her work accordingly. Suggest-

tions are given for the project method of teaching cooking, laundry, and housekeeping. The possibilities of correlation with other school work—geography, arithmetic and English—are suggested, as are methods for "getting over" the desired education.

Altogether the pamphlet is not only a splendid practical help but a real inspiration for food teaching.

Uncle Sam's Model Village. The report on the model village which the United States Public Health Service has been developing on the 516-acre Government reservation at Perryville, Md., shows some interesting facts.

The birth rate of the reservation was 39.33 per thousand, as against 24.39 in the whole state and 28.78 in the county. The death rate was only 3.67. In one year the percentage of underweight children was reduced from 42.7 to 13.8.

The low prevalence of contagious disease is ascribed directly to close watch and prompt isolation, laboratory diagnosis, and prophylaxis; and indirectly to pasteurized milk, filtered and chlorinated water, school medical supervision, and good living conditions, including sewers, screens, and covered garbage cans.

Practical Instruction in English Schools. Under the Education Act of 1918, local educational authorities are required to make provision for practical instruction in the elementary schools. This is defined as "instruction in cookery, laundrywork, housewifery, dairywork, handicraft gardening, and all such subjects as the Board declares to be subjects of practical instruction."

By Circular 1161, dated May 19, 1920, the Board impressed upon local authorities the importance of widening and enlarging the character of the practical instruction, and alluded to the desirability of experiments being made in new forms of practical work suited to particular schools or localities.

The following table shows, for the latest years for which complete figures are available, the number of centres and schools at

which the instruction was given in each subject.

SUBJECT OF INSTRUCTION	NUMBER OF CENTRES AND SCHOOLS IN WHICH INSTRUCTION WAS GIVEN					
	1917-18		1918-19		1919-20	
	Centres	Schools	Centres	Schools	Centres	Schools
Cookery.....	2247	629	2150	588	2208	638
Laundrywork.....	1020	108	1002	115	1059	122
Housewifery.....	473	76	531	102	649	147
Combined Domestic Subjects.....	176	15	178	15	180	15
Mixed Courses in Domestic Subjects.....	258	70	305	76	378	63
Dairywork.....	—	1	—	1	—	1
Handicraft.....	1044	228	1103	249	1342	302
Gardening.....	30	4282	31	4485	24	4616

Health Week, as arranged by the Royal Sanitary Institute, was observed in London, Oct. 9-15. The object of Health Week was to make health during the week the chief topic of public concern; to secure recognition of the fact that disease is a thing which can and should be prevented; to impart sound information as to public and personal hygiene; and to build up a public opinion which will not tolerate a high disease rate or excessive infant mortality, and which feels as a personal reproach the sight of an ill-nourished or neglected child.

Health Week does not compete with other movements, but, on the contrary, seeks to gain fresh support for them, and the General Committee comprises representatives of almost every national health-promoting society in the Kingdom.

In the list of **Women in The Public Health Service** are two officers holding commissioned rank in the reserve—Surgeons Lydia Allen DeVilbiss and Josephine Baker. Next in rank are acting assistant surgeons Blanche Sterling and Edith B. Lowry, Viola Russel, pediatricist, and Elizabeth B. Reid, all of the child hygiene section; Ida A. Bengston, sanitary biologist, Alice C. Evans and Mrs. E. M. A. Enlows, bacteriologists, and Mrs. S. C. Brooks, assistant biologist, all of the Hygienic Laboratory; Gertrude Seymour, president of the Ameri-

can Women in Public Health. and Drs. Daisy Robinson and Edith Rabe, regional consultants, all of the venereal diseases division.

Several large groups of highly trained women have been organized. Among these are the aides, numbering about 400, headed by Marian Morris.

The dietitians' section, organized to take over from the pharmacists the victualing and food administration of the military hospitals, numbers 200. All the members of the section, which is headed by Mrs. H. B. Corsette, are graduates of schools of home economics.

The nurses' corps, headed by Lucy Minnerode, numbers 1,400 and needs 300 more. Another body of nurses, 165 in number, work in clinics and miscellaneous health activities under the supervision of Ann Doyle

Dietitians Needed in United States Public Health Service. The United States Civil Service Commission states that there is need for a considerable number of dietitians in the Public Health Service at hospitals throughout the United States and that until further notice it will receive applications for such positions.

The basic entrance salary offered is \$960 a year with possible promotion to the basic pay of \$1344 a year. To all salaries there is added the increase of \$20 a month granted by Congress. In addition, quarters and subsistence are furnished free by the Government. Applicants are not required to undergo a written examination, but are rated upon the subjects of general education, weighted at 30 per cent, and technical training and experience, weighted at 70 per cent.

Full information and application blanks may be obtained by communicating with the United States Civil Service Commission, Washington, D. C., or with the secretary

of the local board of civil service examiners at the post office or customhouse in any city.

Teacher Trainers. Some of the newly appointed members of the teacher-trainer departments are as follows: Margaret Jones, Alabama Technical Institute and College for Women, Montevallo; Mabel V. Campbell, University of Kentucky, Lexington; Josephine Hart, State Agricultural College, East Lansing, Mich.; Beulah I. Coon, University of Nebraska, Lincoln; Emma Baie, State Agricultural College, Durham, N. H.; Blanche Gillmore, State Agricultural College, State College, N. M.; Nora Ella Miller, State Agricultural College, Stillwater, Okla.; Mrs. Ida S. Harrington, State College, Kingston, R. I.; Alice Kewley, State Agricultural College, Logan, Utah; Mrs. Edna Coith Atkinson, State College for Women, Tallahassee, Fla.

New State Supervisors of Home Economics. Kate L. Bear, Arizona; Adah Hess, Assistant, Illinois; Ruth Freegard, Michigan; Clare E. White, Missouri; Ida F. Carr, Assistant, Nebraska; Katherine Moran, Assistant, North Carolina; Mrs. Ida S. Harrington, Rhode Island; Lena K. Pierce, Tennessee; Jessie Winchell, Vermont.

NOTES

Mrs. Martha H. French, formerly State Supervisor of Vocational Home Economics for Michigan, is now Vocational Director at Ellis College, Philadelphia.

The University of Pennsylvania has discontinued the technical courses given in home economics. An arrangement has been perfected whereby the Pennsylvania students may enter the regular classes at Drexel Institute.

AMERICAN HOME ECONOMICS ASSOCIATION

WITH THE DIVISION OF SUPERINTENDENCE, N. E. A., CHICAGO, FEBRUARY 28, MARCH 1
AND 2, 1922

TUESDAY, FEBRUARY 28, RED ROOM, HOTEL LASALLE

9.00 a.m. Council Meeting

10.00 a.m. General Session. Mary Sweeny, President, presiding

President's Address

Topic: Nutrition of Children

The Feeding and Physiology of Children

Amy L. Daniels, Child Research Station, University of Iowa

Questions and discussion from the floor

Suggestions for Nutrition Work in the Schools Based on Results of Health Surveys

Lydia J. Roberts, University of Chicago

Five minute reports of class room work

2.30 p.m. Trips and Inspection of Exhibits

WEDNESDAY, MARCH 1, RED ROOM, HOTEL LASALLE

9.30 a.m. General Session. Jenny H. Snow, Chairman of Teaching Section,
presiding

Topic: A Basis for Forming Home Economics Courses

A Psychologist's Viewpoint, Instincts as a Basis for Some Home Economics Problems

Stella Vincent, Chicago Normal College

Discussion: Emma Conley, State Department of Vocational Education, New York

Mrs. Henrietta Calvin, U. S. Bureau of Education

Mrs. Helen Thompson Wooley, Merrill-Palmer School, Detroit

Anna E. Richardson, Federal Board for Vocational Education

Mabel T. Wellman, Indiana University

Open discussion from the floor

2.30 p.m. Trips and Inspection of Exhibits

8.00 p.m. Dinner at The Chicago College Club with Short Speeches

THURSDAY, MARCH 2, THE UNIVERSITY OF CHICAGO

10.00 a.m. General Session. Katharine Blunt presiding

What the Office of Home Economics is Doing for the Secondary School Teacher

Minna C. Denton, Assistant Chief, Office of Home Economics, U. S. Dept. of Agr.

Topic: Tests in Teaching Home Economics

Presentation of Tests with Practical Demonstration by Elementary and High School
Pupils

Clothing: Mabel Trilling, University of Chicago

Florence Williams, Supervisor, Richmond, Indiana

Adah Hess, Acting State Supervisor of Home Economics Education, Illinois

Food: Grace McAdam, Supervisor Domestic Science, Detroit

Reports of Tests Given in Public Schools of Chicago and Other Cities

1.00 p.m. Luncheon at Ida Noyes Cafeteria

Visits to Laboratories of Home Economics Department. Demonstration of Determinations of Basal Metabolism

Arrangements have been made for a number of trips which may be taken on the afternoons of Tuesday and Wednesday. Some of these are listed below. It may be possible to arrange for other visits if the committee is notified in advance. There will be a desk at the Hotel LaSalle on Monday, Tuesday, and Wednesday where information may be obtained and registration for trips may be made.

An exhibit of the work in the Public Schools will be open throughout the week.

Suggested Trips:

- Wholesale Establishment of Marshall Field and Company
- Cold Storage Plants and Commission Houses
- Nutritional Work with Children, Cook County Hospital
- Nutrition Clinic, Municipal Tuberculosis Sanitarium
- Penny Lunches and Lunch Rooms in Elementary and High Schools
- Day Nursery and Class in Child Care, Winchell Continuation School
- Home Economics Classes in Continuation Schools
- Housekeeping Centers
- Unit Kitchens in Jones and Nash Schools
- Regular Work in Elementary and High School Classes

Address any requests for information to Frances L. Swain, 5821 Dorchester Ave., Chicago.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE Journal of Home Economics

VOL. XIV

FEBRUARY, 1922

NO. 2

THE NEED FOR RECOGNIZING ART PRINCIPLES IN THE TEACHING OF HOME ECONOMICS¹

ELLEN HILLSTROM

Assistant Professor of Home Economics, University of Wisconsin

Art is such an integral part of home economics that it is impossible to separate one from the other. Art is woven into the very aim of home economics teaching, namely, to prepare for the art of right living. Side by side with the knowledge and technique to be gained in courses in foods, clothing, and house decoration is the art involved in each; and the course, no matter how elementary it may be, which fails to develop the art side, has neglected a subject of vital importance in the lives of the students.

How shall we develop this art side? How shall we meet the need for recognizing art principles in the teaching of home economics? In the first place, the teacher must have confidence in her own artistic ability. "But," some may say, "I have no artistic ability. I am no artist, I cannot draw."

Surely art is not limited to drawing. All art is good arrangement no matter what the medium used. It is doing a thing in the finest way it can be done. Often it means doing a commonplace thing in an uncommon way. The girl who arranges a dining table, the girl who deals with a plain dress pattern, the woman who has a house to furnish, each may become an artist in her line as may the painter who works on a canvas or the sculptor or potter who works with clay. In each case, the

¹ Address delivered before the Home Economics Section of the Wisconsin State Teachers Association, Milwaukee, Nov. 1921.

art of it calls for respect for a plan to be executed, appreciation of fine arrangement, and ability to execute the plan in mind. Such qualifications manifest themselves even in the simplest tasks of everyday life. We say of one person that she has good taste in dress. What do we mean? Simply that she has shown an appreciation of line, mass, and color in dress that are becoming to her; and that she has the ability to select, out of the clothing she sees in the shops, just what is appropriate for her for various occasions. Moreover, she herself may have ability to create garments that are becoming and unusual. But such power is not acquired without effort. Good taste does not impose itself on an individual. Both ability to select and power to create are the result of many experiences, not merely of making a choice, but of selecting the most appropriate, of securing inspiration from choices made by others, of trying again.

But you have some artistic ability now! The fact that you have chosen the profession of home economics proves that some of that artistic instinct must lie in matters that relate to dress and to the home. You care how you dress; you select a certain hat because it is becoming to you and because it harmonizes with your dress; you often select a restaurant or a tearoom because you know it serves food well; you select certain furnishings for your room because they meet your needs and because you believe they are appropriate and beautiful. To the extent that you do care, you have an appreciation of art. To the extent that you do have power to make good choices, you have artistic ability. You must find where your best art interests lie and make use of them, give them proper exercise, make them grow.

In the second place, to meet the need for recognizing art principles in the teaching of home economics, the teacher must realize that she has a great responsibility in matters of art as it relates to dress and to the home. By showing good taste in her own dress, she may teach more than she realizes in costume design; by showing the art possibilities of the simple dress pattern, she may do more to discourage fads and extravagance than by merely talking against them; by showing good taste in the appearance of the school room, she has a wonderful opportunity to create a desire for more orderly, more appropriate, more beautiful surroundings elsewhere. The importance of an orderly arrangement in the cooking room or the sewing room, of appropriate pictures, of personal touches in flowers and vases, of a change in arrangement from time to time in the rest room can hardly be over-

estimated. This is not so much a matter of the money spent as of judgment in selection. No teacher can afford to be without surroundings that will inspire art efforts in her students. Furthermore, the teacher ought to appreciate the value of using well-selected, illustrative material in connection with her work. Many excellent prints and photographs can be had if one will but investigate. Moreover, stores are generally willing to coöperate with any teacher who wishes to use their material. The teacher should avail herself of these opportunities, and select materials which will emphasize important considerations in her teaching and which will inspire students to do better work. Do you, as a teacher, give of what you know about art? No teacher can ever give all she knows because, when she exercises her own power, it yields increased power of judgment and appreciation in return.

In the third place, the teacher must provide *exercises* which involve planning, making comparisons, choosing the most appropriate, and seeking inspiration from good examples made by others. Though no teacher can give art to her students (for art is an individual expression which has been developed within the student's mind), she can provide exercises which may stimulate artistic effort and increase the power to appreciate or to produce art. She may provide exercises which will give these powers an opportunity to act in such a way that the result is an art effort. She may encourage art effort by constructive criticism. She may inspire greater art effort by showing the students a wise selection of illustrative material. She may cause students to have confidence in their own ability by emphasizing from time to time the good qualities of whatever they do.

Let us take, for example, a problem that might be used in any high school class—that of planning and making a dress appropriate for school for winter wear. Each student is to use a plain dress pattern, but vary it so that the result will be an individual dress appropriate for her. Most students can at first see nothing beyond the plain dress made from a plain dress pattern, which does not sound at all interesting. Here is the teacher's opportunity: First, to place before her students a number of well selected possibilities of the plain dress pattern, and to explain that these show what others have done with that pattern. Second, to ask the students to select from these the ones they like and to explain why they like them. (The teacher should take time here for constructive criticism in matters of appropriate material and trimming, and in good line and color for various individuals in the class.) Third, to lay aside the

illustrative material so that the students will not depend on it; then to ask the students to discuss the plans they have for their dresses. This should be followed by criticisms and suggestions from the other students, guided by the teacher. It is the exceptional student who does not at this stage have some plan. Fourth, to allow the students to put forth their own art efforts which involve planning, making comparisons, choosing the most appropriate.

In addition to the technique of sewing and a knowledge of stitches and materials, the student has gained an experience in the art of designing. She has exercised the powers that judge and those that execute. It is by such exercise that her artistic ability develops. What is true of the dress problem is equally true of any problem that involves arrangement.

In the fourth place, to meet the need for recognizing art principles in the teaching of home economics, the teacher should strive to encourage the student's art efforts. When a student has done the best she can, her work deserves careful and tactful consideration from the other students, guided by the teacher. No student's effort is so poor that one cannot find a place on which to build constructive criticism. Such criticism picks out the good qualities and builds on them. It helps the student to see her mistakes almost instinctively. Moreover, it helps her to see how she can improve, and it leaves her with a desire to do better. Nothing can so easily destroy art effort, discourage a student, and cause her to lose confidence in her own ability as emphasizing mistakes.

Finally, it is important to emphasize two very desirable qualities in art; namely, sincerity and simplicity. By sincerity in dress we mean material and design that are appropriate for the occasion and for the wearer. By sincerity in decoration in a home we mean furnishings that are appropriate for that particular home. By simplicity, we mean the absence of anything that is elaborate. Uphold the idea that where a good, simple arrangement satisfies all wants, it is generally the most appropriate one.

The results hoped for in the recognition of art principles in the teaching of home economics are far reaching. From the standpoint of the student, they may be summed up in these six points: First, clear and orderly thinking about any arrangement—arrangement of furnishings in a room, pictures on a wall, flowers in a garden, food on the table or lunch counter. Second, appreciation of what is appropriate and beautiful for the home and for dress—for the home in which she lives, for the

occasion for which she dresses. Third, ability to choose wisely. The majority must rely on what fashion produces. Power to discriminate between the appropriate and the inappropriate is worth cultivating. Fourth, confidence in her own ability to choose wisely. Fifth, a desire to venture into something new, to create. No problem, no matter how well it be done, has served its fullest purpose if it does not leave the student with a desire to try it again, to do it in a different way, to make something finer. Sixth, respect for the art in work, no matter what the work, or what the medium used.

From the standpoint of the teacher, the results hoped for are three: First, a realization of the teacher's own responsibility in matters of art in her own field. In her student's eyes the teacher is an example of the art she expounds in her teaching. Often she has expressed herself more than she realizes. Second, a fuller realization of the importance of the art side as well as the technical side of home economics. Third, a desire on the part of the home economics teacher, herself, for more art in connection with her teaching. This is an ideal toward which we should all strive; and, when a teacher of home economics feels the need of closer contact with art, provision will no doubt be made for an art teacher who can relate art in home economics more closely to art in other fields.

HOME ECONOMICS FOR BOYS

MARY RUTH FISHER

Supervisor of Home Economics, Twin Falls, Idaho

If home economics deals so vitally with life, the home, and home problems, is the feminine part of our population to be the only really efficient citizen of tomorrow? Why should not boys as well as girls learn something of home problems? Will our boys become effeminate if they take a course in home economics, not a cookery course, as is sometimes given in the same class with girls, but a course especially suited to their needs? Why should not a boy be taught something of food values? He will probably eat three meals a day as long as he lives. Why not select them intelligently? Why should not a boy be taught something of the care and feeding of children? He will probably have a home of his own some day and it is to be hoped he will have children

in that home. If he knows something of the care of those children will he be less efficient as a father? Why should not a boy know something of the duties of a host? Would he not be saved from many an embarrassing situation if he possessed such knowledge? Why should not a boy know something of the care of the sick? Many a man during our nation wide influenza epidemic would have given all he possessed for some such knowledge.

As these and many other thoughts passed through my mind I decided to plan a course in home economics for boys that would answer, in a small measure, some of these questions. Such a course, as outlined below, was offered last semester in our high school and enthusiastically completed by twenty boys.

The course was open only to Juniors and Seniors. The recitation period was forty-five minutes long, five days a week for eighteen weeks. Some of the lessons had to be given in the evening and these lasted from six to nine o'clock. The course was divided into six units, from two to four weeks being spent on each unit. Following are the units, listed in the order studied:—1. Food values and body needs. 2. Textiles and clothing—what to wear, color combinations. 3. Budgets—spending and saving. 4. Emergencies—first aid, home care of sick. 5. Duties of a host—carving, serving, etiquette. 6. Cookery—camp and home.

The personnel of the class was quite athletic. Five of the "all state" foot ball men, four of the first team basket ball fellows, and the "all state" sprinter were enrolled; so that the class as a whole was very much interested in health and strength. This gave a good opportunity for our opening unit, foods.

Never have I had a class that wanted to go so deeply into the chemistry of foods. They were not content to accept a statement without knowing the reason. We studied digestion and the digestive tract. We studied food values and our individual body needs. In the light of our studies we examined our own food habits and found their faults. The consideration of what to eat before an athletic contest proved most interesting and beneficial, not only to the members of the class but to the whole team to which they belonged. One thing especially helpful was the selecting of correct meals from various hotel and restaurant menu cards.

The second unit—clothing and textiles—was undertaken with just a little uncertainty on the part of the instructor, for many men consider

clothing purely a feminine subject. We studied the manufacture, use, care, adulteration, of the four textile fabrics and tested the fabrics in the laboratory. I had collected fifty or more samples of materials used for men's clothing. These we studied very thoroughly. We discussed cleaning of clothing and visited a dry cleaning establishment; we pressed, folded for packing, and mended small tears in garments. We discussed what to wear on various occasions and considered, briefly, color combinations. Many articles of clothing, purchased after the study of this unit, were brought to me to show the excellent bargains secured because they knew something of textiles. Ties, shirts, suits, and all clothing are now purchased more intelligently by these boys. In the language of one of the boys "I don't feel so completely at the mercy of the salesman, now, when I buy clothing."

The country is considering so seriously the question of thrift that material for our third unit, budgets, was almost unlimited. When the class started I had each boy keep his own expense account so that we might have some personal data when we studied this unit. After only six weeks of account keeping most of the boys were greatly surprised to see the amount spent on pleasure such as movies, bowling, skating. We figured a complete clothing budget for a high school boy, we planned personal and family budgets. Each boy took a yearly income, typical of those received in this section, and planned a budget for a family of five. Many of the boys said it was the first time they appreciated what their fathers had been carrying for many years. We investigated all kinds of savings, bonds, building and loan associations, savings accounts, life insurance, thrift stamps. A prominent business man, a banker, talked to the boys on "banking, savings, and investments." We learned the proper way to write and endorse checks, drafts, and money orders. Many of the boys opened personal savings accounts during this unit and all of them had a better understanding of money matters.

The emergency and first aid unit was supplemented with "home care of sick" instruction. During the first part we combined the Boy Scout and Red Cross work, selecting what would prove especially helpful to boys. We studied bandaging, artificial respiration, fainting, burns, and poisons of all kinds. As a side issue we worked out a system of exercises for morning use to keep us physically fit. The boys requested so much during every unit that it was difficult to select the most important things. During the consideration of "The Home Care of Sick" we

studied foods for the patient, home made devices for the comfort of the patient, care of the patient in bed, changing the bed, filling hot water bottles, giving medicines, and other simple nursing instructions.

Unit number five was perhaps the one enjoyed most. Some of these lessons were given in the evening, as forty five minutes was not long enough for many of them. We were frank in our discussion of standards of conduct between boys and girls; we discussed etiquette of all kinds and for all occasions, wrote and answered notes, invitations, congratulations, and condolences; we had dinner parties, just the boys, where they did all the carving and serving, and their table manners were criticized. We had a buffet luncheon, chafing dish party, and a reception. Many of the instructors in the high school said they could pick out, in any social gathering, the boys who had taken the home economics course. Many girls have told me that the same boys have changed decidedly in their actions towards a girl when alone with her.

The last unit was not carried out so fully as planned on account of slight changes in the school schedule. However we learned to prepare those foods most frequently attempted by men—eggs, hot breads, coffee, meats. We had planned to do all our work in the open, over a camp fire but because of certain changes the cookery was done in the laboratory. We did a small amount of invalid cookery.

It was the unanimous opinion of the boys that the course should be a year in length rather than one semester and that it should be made compulsory. The school librarian said there never had been a course offered in the high school where reference reading was done so faithfully by the whole class. After the course started, many boys, not enrolled for the work, came to me with all kinds of questions along all kinds of lines. In such a course a few of the questions asked at the first of this article can be, in a small measure, answered. Home economics for boys! Does it pay? Decidedly! It requires an immense amount of work, but the returns more than justify the effort.

HOW CHINA USES THE SOY BEAN AS FOOD

WILLIAM HENRY ADOLPH

Associate Professor of Chemistry, Shantung Christian University, China

The word "bean" in China invariably means the soy bean. This is not because there are no other varieties to be found in the orient, but the soy bean is the most democratic kind of bean and is the one variety which the large bulk of the Chinese race meets daily. The occident has been under the impression that the Chinese live on rice. This is true only in the southern half of China, and even there the diet is mixed with soy bean products. North China, including Shantung and Manchuria, the original home of the soy bean, uses large quantities of wheat bread instead of rice as the staple of every day life, and in addition large quantities of soy bean products. If we are to correct our traditional view of the rice diet, we can amend our statement by saying that it is the soy bean which is probably the most universal article in the Chinese dietary. When the Chinese finds it necessary to distinguish between the soy bean and other varieties of bean, he refers to the soy bean as the *yellow bean* (*hwang dou*), and this is the name most common throughout the orient. There have been already distinguished about 300 varieties of the soy bean (*Glycine hispida*).¹ The yellow variety *Ito San* is the most common variety in China.

The use of the soy bean in China dates back to the beginning of China's agricultural age under the Emperor Shen Nung. It is mentioned in the Ben Tsao Gang Mu, the ancient materia medica, written by Shen Nung himself in the year 2838 B.C. The oriental is amused that we now look upon this ordinary yellow bean with such regard, and that we now give it such a place of honor in our food laboratories. We, on the other hand, are surprised that China has possessed and concealed this treasure for four thousand years or more, and we are reminded that she may have still other original contributions to make to western dietetic science.

This present paper is a summary of some studies which have been made in the Shantung Christian University laboratory on soy bean products.² An examination of the chemical composition of the soy bean (see Table 1) brings out the fact that, from the chemical point of view

¹ U. S. Dept. of Agriculture, B. P. I. Bul. No. 197.

² The author is indebted to several of his students for assistance in securing some of the data included in the tables.

at least, it is a well-balanced food, especially rich in protein. The recent world shortage of food, and the demand for foods which are high in nutritive value, has turned the attention of dietitians to the possibilities of the soy bean, and to some of its important products as they have been used in the orient for centuries.

The soy bean is known to the chemical world as the source of the urease of Takeuchi,³ which has been applied to biochemical analysis. The literature of the past ten years on the soy bean is voluminous. A number of important investigations have been concerned specifically with its nutritive value. Street and Bailey⁴ report the existence of a number of valuable enzymes and a large content of galactans and pentosans. Osborne and Mendel,^{5,6} and Daniels and Nichols⁷ determined that the yellow soy bean contains a high percentage of physiologically good protein, a considerable amount of energy-yielding fat and carbohydrate, and a sufficiency of fat-soluble A and water-soluble B vitamins. It is found, however, that there is a deficiency of mineral constituents, namely, calcium, sodium, and chlorides (see Table III). This last is perhaps the principal deficiency of the soy bean as a food. It is recognized that the elements calcium, sodium, and chlorine are of exceptional importance in nutrition, this fact having been noticed particularly in places where the water used for drinking purposes is nearly free from lime and sodium chloride. McCollum and Simmonds⁸ assert that the "efficient utilization of food by growing animals is not possible when the diet is deficient in these elements." Apart from this, the interesting point remains that the soy bean seems to be the only seed, with one or two exceptions, which contains in itself a sufficiency of two of the dietary essentials or vitamins. The factors involved in a good food are probably only partly concerned with the proper ratios of protein, fat, and carbohydrate, and with the availability of these groups of nutrients, but are also concerned with the presence or absence of the so-called vitamins.

During the last few years, the soy bean has found application in the infant dietary, and has become one of the recognized diabetic foods. One of the most satisfactory forms of artificial milk is made from soy

³ Takeuchi: *J. Col. Agr.*, Univ. Tokyo, 1, 1 (1909).

⁴ Street and Bailey: *J. Ind. Eng. Chem.*, 7: 853 (1915).

⁵ Osborne and Mendel: *Proc. Soc. Exp. Med.*, 14: 174 (1917).

⁶ Osborne and Mendel: *J. Biol. Chem.*, 32: 369 (1917).

⁷ Daniels and Nichols: *J. Biol. Chem.*, 32: 91 (1917).

⁸ McCollum and Simmonds: *J. Biol. Chem.*, 32: 29 (1917).

beans. Some of the bread used by the French in the recent war was made essentially from soy bean flour. The soy bean was introduced into France about the middle of the eighteenth century, but only in comparatively recent years was it introduced into America, England, and Germany. There has been established in France for a number of years a factory under Chinese management for the production of a large number of soy bean products. The oil, pressed or extracted from the bean, has been long used in the Far East in cooking, and during the last year or two has risen to be the leading article of export from China. Many investigators have shown the essential economic features of the soy bean. It yields more seed per acre, is more cheaply harvested than any other variety of bean, and only under exceptional conditions is it attacked by weevils. Each one of the by-products is valuable in the industries or for food.

EXPERIMENTAL

All data in the accompanying tables are for the yellow soy bean and its products as purchased on the streets of Tsinan, the capital of Shantung province. The figures below on the soy bean itself accord with the commonly accepted data on the yellow soy bean as it appears in the United States.

TABLE I.
Analysis of soy bean

	%
Water.....	6.43
Protein.....	39.30
Fat.....	18.70
N-free extract.....	24.80
Fiber.....	5.82
Ash.....	4.95

The soy bean as such is not very largely used as food in China, but it is the source of a large number of products. It would be impossible to make a complete list of all these. The best known and the most important are the bean milk, bean curd, bean sauce (soy), bean sprouts, bean oil, and bean cake. The student of nutrition is particularly interested in the bean curd or "bean cheese."

Soy bean cheese. In manufacturing bean cheese the soy beans are ground up with water and strained. The resulting colloidal solution is the soy bean milk, and has the same appearance as cow's milk. Its specific gravity is slightly greater than the latter. The bean residue which does not pass through the sieve is used as feed for hogs. Upon coagulation, this solution yields the soy bean curd, often called Chinese cheese. As far as is known, there are four agents employed in China to effect this coagulation. These are: (1) *lu*, the solid residue prepared by the evaporation of salt bitter; (2) gypsum; (3) *swan giang*, the soured bean milk whey remaining from the previous coagulation of bean curd; and (4) vinegar. The quantities of materials employed and the details of manipulation vary, of course, over different parts of China. A large variety of substances could be used to effect this coagulation.

In spite of the tremendous consumption of bean curd in China, the industry does not center in large factories, but myriads of small shops, as numerous as our own candy stores and

fruit stands, make and supply the daily needs in bean curd for the millions throughout the Chinese republic. Every small town has at least one bean curd shop. Good bean curd must be manufactured fresh every day. The coagulated curd is white in color and resembles our cottage cheese. After coagulation it is pressed between cloths, cut up into squares or moulded into cakes about five inches in diameter and an inch thick, and sold to the Chinese housewife. A cake of the size indicated costs approximately \$.01 in U. S. currency. The cakes of bean curd may also be salted and dried, yielding a product which resembles our cream cheese.

Tradition says that the manufacture of soy bean curd was originated in China in 164 B. C. during the reign of the Emperor Han Wen, by a man named Liu An, the duke of Hwai Nan. The common Chinese name for soy bean curd is *dou fu*, often romanized *tofu*; and the classical name is *li chi*, probably meaning "the morning prayer." It is interesting to note that in China at the present day the bean curd is made in the early hours of the morning, and sold at daybreak.

Liu An was a great friend of the Buddhist monks, and it seems quite probable that he invented this bean curd in order to provide a change or delicacy to break the monotony of the monastic ration. As a matter of fact, bean curd is a real delicacy if carefully made and well cooked. Chinese who are connoisseurs on the subject assert that when so prepared it has the taste of pig's brain. Americans and Europeans eating Chinese food often eat carefully prepared bean curd thinking it is pork. With sugar it produces a dish like custard. Prepared with salt it resembles scrambled eggs.

The Tsinan variety of bean curd is made exclusively with the use of *lu* as a coagulating agent. In the following table the analyses of bean curd are compared with that of common cottage cheese.

TABLE II.

Analysis of soy bean curd compared with cottage cheese

	<i>Soybean curd per cent</i>	<i>Cottage cheese per cent</i>	<i>Dried soy bean curd per cent</i>
Water.....	82.83	53.0	43.2
Protein.....	10.00	19.6	25.0
Fat.....	3.67	23.2	12.6
N-free extract.....	2.70	2.1	5.8
Ash.....	0.80	2.1	13.4

It was interesting to note in dealing with a large number of samples of bean curd that the water content of the bean curd manufactured by any one shop is quite constant. Our experience showed that it was constant within one or two per cent. If calculated on the basis of water-free content, the above analyses indicate that bean curd is somewhat richer in protein than the curd obtained from cow's milk, although it is lower in fat value.

The ash of the local soy bean curd was also analyzed. Table III indicates the composition of the ash of the soy bean.

It is important to note, in the analysis, the higher values for calcium, sodium, and chlorine in the ash of the soy bean curd. The nutrition work on the soy bean itself, referred to above, indicated that its shortcoming lay in the low values for these important mineral constituents. It would seem, however, in the case of this particular one of the soy bean products, that not only has a refined preparation of protein been produced, but in its preparation have been added just those inorganic substances which help to bring it up to the rank of a food of high physiological value.

TABLE III.
Analysis of ash of soy bean curd
 (In percentage of water-free portion)

	<i>Ash of Soy Bean Curd per cent</i>	<i>Ash of Soy Bean per cent</i>
CaO.....	0.57	0.25
MgO.....	0.60	0.50
K ₂ O.....	0.71	2.48
Na ₂ O.....	0.33	0.19
P ₂ O ₅	0.79	1.88
Cl.....	0.38	0.005
S.....	0.09	—
Fe.....	0.01	—

Soy bean milk. Soy bean milk in composition is not far different from cow's milk. In many places in China, bean milk is a food drink. It is usually drunk sweetened with sugar. We of the west employ a number of patented methods for removing the "beany taste" objectionable from the point of view of the western consumer. In the following table, soy bean milk, as produced in China, is compared with the western standard for cow's milk.

TABLE IV.
Analysis of bean milk compared with cow's milk

	<i>Bean milk per cent</i>	<i>Cow's milk⁹ per cent</i>	<i>Bean milk whey per cent</i>
Water.....	90.71	87.0	97.79
Protein.....	4.22	3.3	0.60
Fat.....	1.87	4.0	0.47
N-free extract.....	2.80	5.0	0.80
Ash.....	0.40	0.7	0.34

On examining bean milk under the microscope, it is interesting to note the fine state of emulsion of the bean oil globules. Ladd¹⁰ has invented a homogenizing machine for the emulsifying of vegetable oils for difficult infant feeding. It would seem, however, that the Chinese soy bean milk contains such an oil already emulsified.

Soy bean sprouts. Soy beans soaked in water and allowed to sprout are much relished as a vegetable by the Chinese. Very considerable quantities of soy bean are used in this way. The sprouts are usually cooked in oil, and produce a dish which appeals very strongly to the taste of Americans in China. It is strongly recommended for use as a vegetable on the American table.

TABLE V.
Analysis of soy bean sprouts

	<i>per cent</i>
Water.....	87.9
Protein.....	5.7
Fat.....	0.8
N-free extract.....	3.9
Fiber.....	1.1
Ash.....	0.6

⁹ From published analyses of the United States Department of Agriculture.

¹⁰ Ladd: *Arch. Pediatrics*, 32: No. 6 (1915).

Soy bean cake. The soy bean cake is the press-cake which remains behind after the removal of the soy bean oil in the press mill. The orient has used soy bean cake for cattle feed and for fertilizer. It is of note that it contains a high percentage of nitrogen, but, economical though the Chinese have been, they do not seem to have attempted to convert it into a human food. Only recently has it been very seriously suggested that both in the occident and in the orient this rich nitrogenous material should be converted into some form of food for human consumption. During the north China famine of 1920-1921, the soy bean cake was actually used in the starvation diets to bolster up a failing food supply.

DISCUSSION

The Chinese people make practically no use of dairy products, and the bulk of the people consume very meagre amounts of meat. Yet in spite of this they have lived for centuries on what appears to be a remarkably well-balanced diet by the use of the soy bean. It should be pointed out that the soy bean contains little starch, and that from the nutritive standpoint it is not a wheat substitute, but a substitute for meat or milk.

A number of interesting examples are found in China of the use of bean curd as an agent for growth. One of the writer's Chinese colleagues, whose home is in Anking, has observed that dealers in birds employ bean curd as the sole food for infant birds. The birds are robbed away from their nests immediately after they are hatched, and are then fed bean curd to tide over the infantile period till able to feed themselves. Still more interesting is the case of the true Buddhist monk who from birth is consecrated to the priesthood, and is carried through the period of childhood growth on a rather heavy diet of bean curd. The apparently normal growth of these monks would seem to be paralleled by the experiments of Osborne and Mendel¹¹ on the promotion of growth in rats by both the water-soluble and fat-soluble vitamins contained in soy bean. The country monastic diet is noted for its high content of soy bean products.

In scanning the diet question in China, one is tempted to speculate as to the possible relationship between a protein diet of bean curd and other soy bean products and the subject of resistance to infection. Whether there is any relationship remains to be determined. The Chinese coolie is a case in point, who, in spite of the scanty intake of meat and the constant exposure to overwhelming sources of infection, still does possess a wonderful resistance. The diet of the average coolie contains a surprisingly large amount of beans and bean products. Experiments with rats have shown that their resistance to snake venom is greater when they have been fed a protein diet.

We are accustomed to point out that nature has solved many of her food problems by blind experimentation. The growing young are always fed milk, a protein food. The Far East is full of examples where a sort of natural instinct has led to the incorporation of large amounts of protein food into a diet lacking in nitrogen substance. In addition to this use of the soy bean, there stands out as an example the use of *nuoc-mam*, a protein food, in the rice diets of Indo-China.¹¹ The fact that the Chinese, confronted with so many sources of infection, have come to drink only boiled water, or hot tea, and have come to eat almost all their food hot, is held by many to be another instance of a blind experimentation. A common saying in some parts of China terms "bean milk the poor man's milk, and bean curd the poor man's meat." This simply indicates the extent to which bean curd has been incorporated into the diet of the Chinese.

The true position of bean curd and other bean products in the diet of the Far East will only be made clear when the protein metabolism of the oriental is better understood. Does it operate upon a different standard from that of the European? Again, it may be asked, what are the racial characteristics, if any, which are traceable to the large use of a bean diet

¹¹ Rose: *Ann. inst. Pasteur*, 33: 275 (1919).

in China? It is commonly stated that a meat diet is characteristic of the most aggressive peoples of the world. Has the protein of the soy bean replaced meat in the orient?

CONCLUSIONS

The purpose of this paper is to call attention to the numerous ingenious forms in which the oriental peoples have long made use of the soy bean. The experience of the Chinese in a purely practical, rule-of-thumb way has been so much more extended than ours in Europe and America that it should offer us some suggestions. Many of the dishes made from soy bean products are well worth adoption by us. We are accustomed to hear it intimated that while the occident has progressed so tremendously in the *sciences*, the orient has excelled in the *arts* of life. The observing American in China quickly grasps the truth of this. In the *art* of preparing food the Chinese and the other peoples of the orient have much to contribute. A number of the products mentioned above have appeared regularly on the writer's family table in China served with other foods prepared in the western fashion. Americans in China who live on a western dietary invariably adopt a number of very nourishing and delectable Chinese dishes which they can not be persuaded to part with.

Soy bean propagandists have been especially enthusiastic over the introduction of soy bean curd into America. Dr. Yamei Kin, a Chinese dietitian, has become particularly well-known as an exponent of bean curd on her visits to the United States. Biological chemists in China are interested in the relation of soy bean to metabolism. Efforts are being made to secure the data which will enable us to prepare an intelligent survey of the contributions which China has to make to the rest of the world.

PERHAPS THE CHESTNUT TREE CAN BE RESTORED

The chestnut tree is valued in the parts of the country where it grows, not only for its beauty as a shade tree, but for the food value of the nuts it produces, so that the blight, of Japanese origin, that has caused the loss of so many trees has been a source of great regret. After ten years of experimenting, the Department of Agriculture has found that it is possible to cross the Japanese chestnut with the chinquapin, a dwarf chestnut, and to produce a hybrid tree that is quite resistant to the blight and that yields nuts of good flavor and excellent quality.

REPORT OF THE SUB-COMMITTEE ON COLLEGIATE TRAINING
OF DIETITIANS¹

SUBMITTED BY ABBY MARLATT, CHAIRMAN

The report of the sub-committee on the collegiate training of dietitians is the result of studies of catalogs of two year courses and four year courses which definitely advertise the training work as part of their curriculum, and it embodies suggestions taken from detailed answers to personal letters sent to dietitians at well known hospitals which have in the past received college graduates for periods of training of from three to six months. These hospitals are from the Atlantic coast to Minnesota. Data from the California field was taken from Dr. Agnes Fay Morgan's report made after a detailed study of the work of the hospitals in California.

The chairman had assistance from Dr. Ruth Wheeler, Mrs. Bryan, Dr. Katharine Blunt, Dr. Amy Daniels, Professor Helen Parsons, and Professor Mabel Little, all of whom have either assisted in courses for the training of dietitians or have helped in training dietitians in college and in hospital work.

The report for the two year course is a slight modification from the one presented by Lenna Cooper's committee at the Institutional Economics meeting at the University of Wisconsin two years ago. This is included in this report, at the earnest solicitation of the president of the Dietetic Association and Miss Cooper, both of whom feel that at this time we should continue to recommend a minimum two year course to meet the needs of the group of smaller hospitals who are unable to pay the larger salaries that would necessarily be demanded where the training of the dietitian represents four years of college with additional internship as pupil dietitian in an accredited hospital.

Two Years. In the two year course the outline indicates the best judgment of people who have watched the training of the two year group and have had experience in taking them as pupil dietitians. The need for courses in physics as well as in chemistry, biology, and psychology was recognized by practically all of those who were consulted.

The one criticism that was made is that the amount of time given to food preparation is too limited, that the individual who goes from a two year course to hospital training would necessarily have more to do with the buying and preparation of food than with the diet kitchen work, and therefore a longer period of time should be given to perfecting the technique in cookery. The fact that cookery processes are carried on in connection with the courses in nutrition and dietaries in diet in diseases, and that detailed study is given in the second year to the preparation of food in large quantities seemed to the chairman of the committee to have met this demand sufficiently. Technique

¹ Presented at the Annual Meeting of the American Dietetic Association, Chicago, October, 1921.

would need to be perfected during the summer months either in the individual home or in some other institution so that the routine work would become technically more nearly perfect, leaving the major time in the two years of training to the better grounding in the fundamentals of applied sciences, economics, and art. Following an interne period as pupil dietitian, the graduate of a two year course should be assigned as assistant dietitian in some hospital where the head dietitian has had the wider training. After successful work for one year, she may be sent out as the only dietitian in a smaller hospital.

Four Years. The suggested four year course leading to the Bachelor's degree is definitely divided into groups. In each group the sequence of studies is such as should occur in a well organized course. No attempt was made to adjust to semester or year schedules, as it was thought wise to leave that to the judgment of the home economics department in the institution offering the course, the emphasis being placed on the fact that the general education in the arts and sciences should be a pre-requisite to the applied work in food, shelter, dietetics, and institutional management. With the student who has not had a wide background in general education and intensive courses in sciences such as chemistry, physics, biology, it would be futile to do collegiate work in applying these sciences in the study of foods, sanitation, dietetics, and applied economics.

Where the students are definitely planning to do research work in connection with physicians and other research workers in the hospital, it would be advisable to include such courses in clinical medicine as the previous training of the student would prepare her to take. Under Group H, courses are suggested in clinical laboratory diagnosis; not that the dietitian would be called upon to do this type of work, but that the dietitian must understand the vocabulary and the technique and be able to understand the findings in connection with the laboratory diagnosis, so that the cooperative work with the physicians may be more intelligently developed.

The need for courses in psychology, sociology, and education is recognized by the workers in hospital fields because the native ability to handle employees and work with patients is rare. The better knowledge of human psychology and principles of education should be an asset in developing the ability of the trained dietitian to handle her problems with tact and judgment.

Graduate Year. It is hoped that the institutions throughout the country who are offering courses for the training of dietitians may eventually be able to give graduate work to experienced home economics teachers who are desirous of entering the dietitian field.

It has been suggested that the year of graduate study could be divided into three periods, the first of approximately three months taken during the summer vacation and the other two periods to include the nine months of residence study. The second period beginning in the fall may include detailed study in hospitals or dispensaries and preliminary work in research in metabolism

laboratories, preparatory to the second semester which may be given to a definite research problem selected by the student in consultation with the faculty of the department and the staff of the resident hospital.

Rank. The need for better trained dietitians in our hospitals and cooperative work between the dietitian service and the superintendent of nurses and the superintendent of the hospital is becoming increasingly apparent. If the dietitian is to be given recognition as having coordinate rank in a hospital staff she must be sufficiently trained in the sciences and in her own special field to be able to know what pieces of work she may successfully develop, what types of work are cooperative, and what types of work she should not attempt.

Conclusion. There is a field for the nurses' work, a field for the medical officers, and one for the dietitian. They should be sufficiently separated so that there is no possibility of misunderstanding, but they should be so coordinated that the patient receives the best possible assistance in the struggle back to health. The least training that the dietitian today should receive is the work done during four years of college training, one-third of the credits of which should have been along home economics lines. In addition she should have from at least four months to possibly twelve months of work beyond her Bachelor's degree, this work to be taken in part as pupil dietitian. Later after a wider experience as assistant and head dietitian, she may return to college work, developing research standards in cooperation with a medical college with its group of hospitals.

INSTITUTION MANAGER

Suggested Minimum—Two Years

- I. English—3 semester hours: Written and spoken English, theme writing, special emphasis being placed on outlines, note taking, writing of clear correct English. Also the writing of social, business, and professional letters.
- II. Chemistry—10 semester hours:
 - Inorganic chemistry*—6 semester hours: Properties, use, and preparation of important metals, non-metals, and other compounds. Elementary discussion of chemical theory. The laboratory illustrates theoretical instructions, and lays foundation of laboratory technic. Principles of qualitative analysis introduced.
 - Organic and food chemistry*—4 semester hours: Aliphatic and aromatic series of carbon compounds with emphasis on such parts of organic chemistry as are most closely related to food chemistry. Chemistry of carbohydrates, fats, and proteins, including qualitative analysis of typical foods.
- III. Physics—5 semester hours: Principles of mechanics, heat, light, electricity, and their application to the household.
- IV. Biology—7 semester hours:
 - Bacteriology*—4 semester hours: Nature of bacteria, related to public health, spread and contraction of disease, food manufacture and decomposition. Laboratory and lecture course.
 - Human physiology and hygiene*—3 semester hours: Class, laboratory, and demonstrations on mammals.

- V. Psychology—3 semester hours: General and applied psychology with experimental work as a basis for better understanding of employees.
- VI. Economics—3 semester hours: General introductory course. Lectures and readings.
- VII. Foods—4 semester hours: A study of foods and food composition, general principles of cookery, serving of foods. Laboratory work includes preparation of various classes of food, not only the fundamental foods but pastries, salads, entrees, and fancy desserts.
- VIII. Food Marketing—3 semester hours: Food production, transportation, storage, marketing and markets, cooperative buying and selling, price fixing and price regulation, trade discounts, trade names, and field practice in buying.
- IX. Nutrition and Diets—4 semester hours: Chemistry and physiology of digestion, metabolism and its products; energy value of food; energy requirements of the body; nutritive properties and qualitative relations of protein, fats, and carbohydrates and ash constituents; vitamins. Food requirements of individuals in health and through infancy, childhood, adolescence, adult life and old age, menus for the different periods of life.
- X. Diet in Disease—3 semester hours: A study of pathological conditions in various diseases and dietetic requirements to aid in their cure. Diets computed in grams and total calories and variations in menus planned for diabetic, nephritic, tubercular, gastro-intestinal, anemic, febrile, and gouty cases.
- XI. House Architecture—3 semester hours: Study and drawing to scale of typical floor plans and elevation of hospitals, cafeterias, lunch rooms, dormitories. Study of materials and treatment as to sanitary finishes, color schemes; kinds and installation of plumbing, heating, and lighting fixtures. Estimation of cost.
- XII. Institutional Housekeeping and Laundry—3 semester hours: Details of the care and cleaning of floors, walls, equipment, machinery, and detailed processes of laundry work. Selection and cost of institutional furnishings; handling and repair of household linen.
- XIII. Institutional Equipment—2 semester hours: Principles involved in construction of institutional equipment; care of equipment, types of equipment, newest equipment on market; planning of institutional kitchens; writing of specifications for equipment orders.
- XIV. Large Quantity Cookery—4 semester hours: Preparation of foods in large quantities; studies of cost, loss in weight, determination of size of proportion, cost of each serving, selling price of each serving; menus for lunch rooms, cafeterias, tea rooms, dormitories, hospitals, and other types of institutions; economic and social feature of above menus.
- XV. Administration, Organization and Accounting—3 semester hours: Types of institutions and systems of administration; labor problems; personnel; line of authority; labor turn-over; characteristics of employees of the different nationalities; management of help; duties of maids and janitors; other routine work of an institution household; the relation of a dietitian to an institution, her duties. Simple methods of accounting; factors entering into retail costs of food consumed; overhead; per capita costs.

Pupil Dietitian: Following the two-year course the pupil should spend four months in an approved hospital or other type of institutional organization before being placed in institutional work.

DIETITIAN

Suggested Four Year Course Leading to B. S. Degree

GROUP A—Taken as part of a liberal education (should be one-third of total):

English—6 semester hours required; others elective: Composition and rhetoric, 1 year, 6 credits. Commercial correspondence or Sophomore composition, 1 semester, 2 credits. English literature, 1 year, 6 credits. Advanced courses comparative literature, 1 semester, 2 credits.

Language—8 to 16 semester hours in the college: Latin in high school 3–4 years should be taken to give foundation for medical courses. Advanced courses in foreign language, reading knowledge should be the measure.

History—3 semester hours required: At least one year to secure knowledge of college methods in historic study—may be ancient, medieval, English, United States, modern, European.

Art—3 semester hours: General courses in art appreciation.

Economics—1 course required; others elective.

Psychology—3 semester hours required; others elective: General, 1 semester, 3 credits.

Social, 1 semester, 3 credits. Experimental or educational, 1 semester, 3 credits.

Sociology—1 course at least on the organization of the family.

Education—Courses suited to needs of student.

GROUP B—Science as foundation for advanced study (should be at least 1/5 of total):

Chemistry—at least 18 hours: General, 10 credits. Quantitative, 3 credits. Organic, aliphatic, 3 credits. Food, 4 credits. Physiological, 5 credits.

Physics—1 year, 6 credits: General and applied.

Biology—1 year, 8 credits: Bacteriology, 4 semester hours: General and applied. Lecture and laboratory course. Human physiology and hygiene—4 semester hours: Lecture and laboratory course.

GROUP C—*Food Study*: Applied science, 1–1½ years, 10 credits:

1. Selection and preparation of foods including serving of meals. 1 semester, 3 credits. Lecture and laboratory.

2. Food economics (applied economics), 3 semester hours: Production, transportation, storage and preservation, markets, tests for quality, substitution values.

3. Experimental cookery, 1 semester, 2 credits.

GROUP D—*Textile Study*—1 semester, 3 credits: Textile chemistry, laundry chemistry, and laboratory practice.

GROUP E—*Housing and Sanitation*—1 year, 6 credits:

1. Architectural plans and details, plumbing, heating, lighting, sanitation, floor and wall finishes of hospitals, halls, cafeterias. 1 semester, 4 credits.

2. Decoration—1 semester 2 credits: Study of textiles, furniture, color, design suited to institutional equipment.

GROUP F—*Dietetics*—1 year, 7 credits:

1. Nutrition and diet—4 semester hours: Dietary standards; diet as influenced by age, sex, and occupation; construction of dietaries and service of meals; detailed dietary study made on self. Group dietary study made at practice cottage. Study of metabolic processes; urine, feces, blood analysis, and respiration tests following dietary studies. Food requirements of young children; comparative study of milk and various proprietary infant foods and formula; principles underlying milk modification in infant feeding.

2. Diet in disorders of nutrition—3 semester hours: Lecture, reading, and laboratory course. A study of intermediary metabolic processes, the adaptation of diet to the disorders of nutrition.

3. Organization of teaching courses—2 credits.

GROUP G—*Institutional Administration*—14 credits:

1. Organization and administration of institutions: Principles of industrial organization applied to purchasing food, equipment, and supplies for an institution, accounting and office records; storeroom management and inventories; studies of service problems in management of employees; institutional housekeeping cafeteria organization and management.
2. Large quantity cooking: Practice in preparing food for large groups; cost studies in changes in weight of food due to cooking; in determining size of portion; in number of portions per pound and in cost of servings. Limited to food majors. Lecture and laboratory.
3. Institutional dietaries and catering: Marketing and menu planning for all kinds of institutions, economical use of foods, catering, community kitchens.
4. Institutional laundry management: Purchase, care, and use of laundry equipment, use of soaps, starches, and bluing; organization of work in laundry; methods of laundering various materials; methods of checking and accounting.
5. Tea room, restaurant, and hotel management: Study of location, amount of capital needed, necessary equipment, organization of staff and work, menus, cost accounting, and advertising.
6. Institutional equipment: Principles involved in construction of institutional equipment; care of equipment; types of equipment; newest equipment on market; planning of institutional kitchens; writing of specifications for equipment orders.

GROUP H—*Clinical Laboratory Diagnosis*—1 semester, 3 credits: Study of metabolic processes with special references to abnormal conditions. Analysis of normal and pathological urine, gastric contents, stools, blood.

Suggested Year Graduate Study (12 mo.) for M. S. Degree: First period—Pupil dietitian in hospital or University Commons, 3 months. Second period—Clinics in hospital or dispensary work in research and metabolism laboratory. Third period—Research problem under hospital and department management.

REPORT OF SUB-COMMITTEE ON TEACHING DIETETICS TO STUDENT NURSES¹

SUBMITTED BY KATHARINE FISHER, CHAIRMAN

Introduction

Dietetics has always been one of the most important subjects in the nursing school curriculum, but, with the recent strides in nutrition and in the dietetic treatment of disease, it must necessarily take a much larger place in the preparation of the student nurse. Without a thorough, up-to-date course in dietetics, nurses nowadays find themselves seriously handicapped in public health work and in other branches of nursing.

Reports from nursing schools throughout the country and the results of state examinations for a number of years have shown that dietetics is one of our

¹ Presented at the Annual Meeting of the American Dietetic Association, Chicago, October, 1921.

weakest subjects. There are many reasons for this, among them lack of sufficient time, adequate equipment, good textbooks, and trained teachers. But the main reason is that few of us seem to have given the subject the careful thought and study it demands. We have been content to go on with the same old cookery outline and the same teaching methods with which we started years ago, forgetting that the whole subject has been growing rapidly and that the emphasis has changed greatly in the past few years, both in subject matter and in method.

Dietitians as well as nurses are responsible for whatever failure there has been to galvanize this vital subject into life. The American Dietetic Association has shown its interest by appointing a sub-committee, of its Committee on Education, to cooperate with the Education Committee of the League of Nursing Education in working out a more satisfactory outline for the teaching of dietetics to nurses. The report which follows is only a preliminary study to be supplemented later by a fuller outline of typical classes or lessons, now being worked out by the members of the Dietetic Association, and also lists of illustrative material and text and reference books, for the use of both teachers and students.

The committee invites suggestions and criticisms from all those interested in the better teaching of this subject. The members of the sub-committee are: Lenna F. Cooper, Battle Creek Sanitarium, Battle Creek, Michigan; Charlotte Addison, Post-Graduate Hospital, New York; Isabel M. Stewart, Dept. of Nursing & Health, Teachers College, New York, (Chairman Education Committee of the National League of Nursing Education); Katharine A. Fisher, Dept. of Household Administration, Teachers College, New York.

OUTLINE OF A COURSE IN DIETETICS FOR STUDENT NURSES

Preliminary Course

Time. This course should be given during the preliminary period of training. A minimum of 60 hours of lecture and laboratory work is recommended; laboratory periods should be at least two hours in length.

Instructor. The class should be conducted by a dietitian who is a graduate in household science from a recognized school.

Preparation of Class. It is assumed that the students are of high school grade. Exemption from the course should be granted to those students considered by the superintendent of nurses and the dietitian to have had the equivalent of the work given. An examination should determine such exemption, and all students should be required to take any work directly relating to cookery for the sick which was not included in their previous training.

Laboratory Equipment. A laboratory is essential, with facilities for individual laboratory work. Not more than sixteen students can be handled satisfactorily by one teacher in one laboratory section. Illustrative material, such as charts, slides, and exhibits should be supplied and freely used.

Aims of Course.

1. To give students a sound fundamental understanding of the principles and methods of cookery for well and sick people.

2. To make them familiar with the nutritive values of food and with the essentials of well balanced daily meals for well people and convalescents under varying conditions.
3. To help the students to thoroughly appreciate the economic aspects of food, such as selection, relative costs, and control of waste.
4. To give a training in high standards of cleanliness and sanitation in the care, preparation, and service of food.
5. To give practice in the planning of well balanced, attractive and suitable menus, and a training in the efficient preparation of these.
6. To demonstrate and maintain dainty and artistic service of food.

Methods of Teaching.

1. Some instructors may wish to separate the lectures from the laboratory periods. If this scheme is followed, it is thought that fifteen one-hour lecture periods should be planned within the minimum time recommended above. The most satisfactory method, however, is the combination of lecture and demonstration by the instructor, followed by laboratory practice, investigation, and discussion by the students. The students have thus a chance to directly connect, under supervision, the general principles with their methods in laboratory practice.
2. Instructors should remember that their students are nurses in training and not students specializing in home economics. Only that material, therefore, which the nurse will use during her training and in her professional work later, should find a place in the course, and it should, of course, be presented with a view to constantly holding her active interest. "Fancy cookery" as such has no place in this course. Dainty and effective garnishes should be taught and interesting variations from the typical dishes considered, but dishes involving much time and elaborate arrangement of ingredients should be excluded.
3. The introductory lessons should bring the students into immediate touch with the actual work of food preparation instead of being entirely devoted to the less interesting phases of laboratory practice, such as a study of equipment and fuels. It is not desirable to devote the greater part of these first lessons to the theoretical side of the subject. The students should think in terms of the daily food service to patients on all kinds of diet, and it is considered wise to base as many of the lessons as possible on the preparation of an entire meal and the setting up of trays. This plan gives the students practice in applying their knowledge of food values to the planning of the day's diets, and gives the instructor an opportunity to bring to the attention of the class concrete examples in diet and the problems to be met in planning attractive, palatable, and well balanced menus. Problems representing suitable meals for persons under specific conditions, such as meals for children of different ages, for adolescents, for adults, and for the aged, should be worked out by the class instead of asking them to consider isolated masses of facts concerning food values and food preparation. Methods of cooking should be studied as they are first used, and later a summary and comparison made of the various methods, as to their effect on the flavor and digestibility of food.
4. In conducting classes the instructor should lay the emphasis on the reasons for following the various methods, on "why" as well as on "how" and "what." This will keep live questions constantly before the students, making them stronger in technique, more resourceful, and capable of thinking independently in this field. In all review work, questions given to the class should reflect this more desirable method of teaching, and it is of the greatest importance that the actual needs of the nurse in her later professional work should be given the closest attention.

5. Standard or basic recipes should be used freely and the students should be instructed in varying these as necessary. This should give them a knowledge of general principles and of proportions in food combinations and eliminate the memorizing of recipes, a practice which cannot be condemned too strongly. For example, using as a basis the standard recipe for cream sauce, a cheese sauce for macaroni may be made and the various cream soups prepared. General principles of cooking the various typical groups of food should be stressed in the laboratory work.
6. Students should be trained in the critical judgment of the finished dishes and of the meals prepared and served. There should be constant comparison of class results by the instructor and students and for this they may work out score cards. For example, the following might be used:

	<i>Possible Score</i>	<i>Actual Score</i>
Baked Custard	10	
Appearance	1	
Consistency	2	
Texture	4	
Flavor	3	
Preparation of a tray	10	
Service	3	
Immaculate service	1	
Artistic arrangement	1	
Convenience for patient	1	
Menu	7	
Suitability to patient's condition	2	
Combination of foods	2	
Palatability and digestibility of food	3	

7. Class notes should not be voluminous. They may be conveniently arranged on cards, indexed for reference purposes, and should be carefully corrected by instructor. A good textbook and suitable reference books relieve students from much note-taking, but at present there appear to be few suitable books of this kind for student nurses. Some are, for the most part, a collection of recipes, while others pay too much attention to specific methods and specific information, with inadequate attention to general principles. The material presented is not always well adapted to the average general educational preparation of the class and to their vocational needs.
8. The attention of students should be frequently drawn to the various ways in which this work is related to nursing education and opportunities for applying this part of their training as students in the hospital and later in their professional work. The growing tendency, in medicine and nursing, to pay more attention to the dietetic treatment of disease should receive full consideration.
9. The social and economic aspects of the food problem should also be kept before the class. Many of these nurses will be working later with poorer families and will be expected to advise them about the choice and the relative costs of standard foods.
10. The instructor should keep closely in touch with the other preliminary courses most directly related to the work in dietetics, so that she may know how to correlate her work with these to the very best advantage. Instructors should also keep in touch with the latest developments in nutritional work and familiarize the students with the various sources through which they may keep their knowledge up-to-date.

11. The principles of physical science should be woven into the course in a popular way, to give the reasons for certain procedures in cookery which other courses in the preliminary work do not cover.
12. The content of a course in dietetics for nurses has already received much thought, but the methods of teaching have not been given adequate attention. Students are therefore not always well prepared to use this training to the best advantage.

Content of Course. (These subjects are not arranged in the sequence in which they would be presented in a course of study, nor are they divided into lessons. Such an outline will be submitted later by the committee—following the suggestions discussed above).

1. Review of the physiology of digestion, absorption, assimilation, and excretion.
2. Classification of foods and food products under typical food groups according to their place in the diet and to their economic value, as for example:
 - A. *Milk*—important as a source of energy, protein, lime, and vitamins, unique as sufficient in growth-promoting food. Study of grades of milk.
 - B. *Cereals and cereal foods*—economical source of protein, but not well balanced in salts and vitamins; typical starchy foods.
 - C. *Vegetables and fruits*—varying greatly as sources of energy, but rich in vitamins.
 - D. *Typical protein foods and food products*:
 - Meat, fish, and poultry—generally popular, but expensive as sources of protein and fat. Poor in lime and in vitamins.
 - Eggs—rich in protein, salts, and vitamins; value in the dietary depends much on market conditions.
 - Cheese—valuable as a meat substitute in concentrated form.
 - Nuts—rich in protein and fat; valuable as a meat substitute.
3. Food values and their measurement; practice in computing food values.
4. Composition and food value of the different foods; specific functions of: proteins, fats, carbohydrates, salts, vitamins, water.
5. Factors in food requirement such as age, climate, activity, size; consideration of suitable diets for persons under these varying conditions.
6. The preparation of foods:
 - A. Selection, cooking, and serving of the typical protein and carbohydrate foods and of the fats and oils:
 - Fruits and vegetables*—dried and fresh, greens and legumes.
 - Cereals and cereal foods*—including gruels, breakfast cereals, macaroni and rice. Comparison of ready-to-serve and home-cooked cereals as to cost and food value.
 - Eggs, milk and milk products*—including sterilization and pasteurization of milk.
 - Fish*—baked, boiled and broiled fish; shell fish.
 - Meat and poultry*—broiled chops and steaks, squabs and chicken; broths and beef juice.
 - Fats and oils*—their use in cookery; commercial preparations.
 - B. Preparation of the typical food combinations:
 - Beverages*—including albumenized drinks, and milk and egg drinks.
 - Thickened liquids*—the use of the prepared starches, especially cornstarch and flour, in making cream soups, purees, sauces and desserts; basic recipes for these dishes with practice in varying them as to thickness, flavor and ingredients; method of using eggs with the starches in thickening liquids.
 - Flour mixtures*—study of lightening agents; basic recipes for biscuits, muffins, and plain cake, with methods for simple variations; sponge cake.

Salads—illustrating the serving of different foods and suitable combinations of these; salad dressings.

Gelatine dishes—basic recipes for the plain jellies, sponges and creams, with the simple variations.

Frozen dishes—types and their variations; freezing small quantities.

7. Food sanitation—handling and care of food, especially of milk; care of kitchen utensils and equipment; brief study of the sanitary aspects of commercial food distribution and preservation.
8. Methods of cooking—their effect upon the digestibility and flavor of food.
9. Use and abuse of condiments.
10. Hospital diets—use of liquid, light and full diet, with general procedure in feeding the sick.

Practical Work in the Diet Kitchen:

1. It is coming to be generally recognized that the diet kitchen is a laboratory where the student nurse may apply her technical knowledge and where she may develop a fair degree of skill in preparing food for the sick. The student is there to be taught and must not be thought of simply as a means of getting the work done.
2. The duties of the student nurses in the diet kitchen should not involve any needless repetition, and their services should not be used for the routine of dishwashing and other cleaning, or for much preparatory work, such as paring vegetables and washing greens. Maids should be employed for this purpose.
3. It is desirable that the students should have some of their diet kitchen experience during their preparatory course or soon after, so that they may apply at once the elementary principles and procedures outlined above. This period should be for at least three or four weeks, the time of each student being carefully organized so that she may have practice in the preparation of all typical dishes included in the above outline. This should prepare her to assist in the preparation and serving of the simpler ward diets. The student is not expected to spend more than four hours a day on this practical work.
4. Later when she has had more opportunity to study different types of disease and to care for more complicated cases, she will take up the preparation of special diets and formulae for infant feedings as outlined in the more advanced course below.

OUTLINE OF A COURSE IN DIETOTHERAPY FOR STUDENT NURSES

Time. A minimum of 20 hours is recommended, or 30 hours if infant feeding is included.

It is thought advisable that this course should be given as soon as possible after the preliminary training and, if arrangements can be made to have the students receive this instruction during the time they are taking their training in medical nursing, they will be able to use their knowledge to the best advantage.

Instructors. The dietitian should be a graduate of a recognized school, fully qualified to meet the requirements of special hospital dietary work. The medical phases of the subject may be given by a physician who is a specialist in this field.

Aims of Course:

1. To apply the principles of cookery and of nutrition to the dietetic treatment of nutritional disorders.
2. To teach the students how to fill doctors' dietary prescriptions and to make attractive menus and palatable meals from these.
3. To teach the students how patients may be led to understand the purpose of their dietetic treatment in order that they may coöperate more fully with the physician and nurse.
4. To study the charting of diets on history sheets.

Methods of Teaching. As the student nurse will have an opportunity for practice in preparation of diets in the diet kitchen, it is thought that less than half the time devoted to this course should be given to laboratory practice. As each type of diet is being considered, trays, demonstrating suitable menus, should be prepared and used as a basis for lectures and for discussions by the students.

Content of Course:

1. Principles in the dietetic treatment of disease, with special reference to diseases of metabolism, and other conditions requiring special diets.
2. A study of the various types of diets as they are used in treating various diseases, using each as a basis for planning attractive menus and preparing palatable meals for patients: starch free diet, fat low diet, protein low diet, purin free diet, salt free diet, diet with restricted or forced fluids, high calorie diet, diets with roughage, diets as free from roughage as possible, various combinations of above diets.
3. Practice in filling dietary prescriptions, computing calorie values of special diets when necessary, and charting.
4. Infant feeding—modified milk and doctors' formulae—technique of milk room, such as care of feeding-bottles, use of Babcock tester.

Practical Work in the Wards and Diet Kitchen:

1. When the student nurse is experienced enough to be assigned to the position of chief diet nurse in the medical or surgical wards, it is desirable that her time should be divided, if possible, between the wards and diet kitchen, in order that she may study the patients' individual needs, prepare under supervision the diets for the special cases, and follow closely the effects which are produced by the treatment.
2. In the same way, her service in the milk room should, if at all possible, be a part of her service in the children's wards, so that she may know the condition of the babies and watch from day to day the results of the formulae they are getting.
3. As an instructor of nurses, the dietitian or her assistants should, through visits to the wards, keep closely in touch with the diet work of the student nurses there. In the larger hospitals where the dietitian has charge of the administration of the dietary work throughout the entire hospital, she should, of course, have adequate assistance for the supervision of the work of the diet kitchen and for the training of student nurses. Here also the pupil dietitians should get their training in supervising special diet work.

Post-Graduate Work. Special problems of food and nutrition in public health work and in institutional administration should be considered as post-graduate study. The social service dietitian is best qualified to give instruction in the former, and the administrative dietitian in the latter. Nurses who wish to specialize in metabolic work should also plan to take post-graduate training.

REPORT OF THE SUB-COMMITTEE ON PROFESSIONAL TRAIN-
ING OF DIETITIANS IN HOSPITALS AND
MEDICAL SCHOOLS¹

SUBMITTED BY RUTH WHEELER, CHAIRMAN

- A. Changes from present practice recommended.
 - 1. Longer service: one year internship, eventually.
 - 2. More study paralleling practical work.
 - 3. More clinical experience.
 - 4. Greater responsibility toward the end of the year.
- B. Character of course.
 - 1. Practice.
 - a. One to three months in each phase of work available, varying with the institutions and with the part of the field for which the student is preparing herself.
 - b. A total of one year in larger institutions having varieties of training to offer.
 - c. Complete responsibility for at least one chosen phase of the work for at least the last month of training; perhaps as vacation relief.
 - d. Clinical experience from being present in ward walks or bedside consultations of the chief dietitian or internist or both.
 - 2. Intensive study; with credit in hospitals connected with universities, courses suggested.
 - General administration of a dietary department.
 - Hospital dietetics including dietotherapy, nutrition of infants and children.
 - Seminar in nutrition.
- C. Suggested course for graduates in a four year college course in home economics with suitable general academic marginal courses; given in a hospital connected with a medical school. Modifications or sections of this course are to be tried out in hospitals of several types.
 - 1. Practice.
 - a. General administration, 1 month; diet kitchen, 1 month; wards, 1 month; children's hospital, 2 months (1 month in milk room); metabolism ward, 2 months; research laboratory, 2 months; specialization, 3 months (11th month as assistant, 12th month vacation relief). Specialization may be in any of the above phases for which the student has shown special aptitude.
 - 2. Intensive study: courses. Seminar, 1 hour weekly, 9 months; administration, 5 hours weekly, 1 month; hospital dietetics, 5 hours weekly, 2 months; research, optional, 3 months; the nutrition of infants and children, including milk room methods, 3 months.

¹ Presented at the Annual Meeting of the American Dietetic Association, Chicago, October, 1921.

EDITORIAL

Mrs. Mary Johnson Lincoln, author of "The Boston Cook Book," and an authority on cookery and home economics, and writer and lecturer, died in her home in Boston, following a paralytic stroke, at the age of seventy-seven years. Born in Attleboro, Mass., she was graduated from Wheaton Seminary in Norton, Mass., in 1864, and a year later was married to David A. Lincoln, since dead. In 1879, when the Boston Cooking School was established, she was made principal, served for six years, and then became a writer and lecturer on domestic science. From 1893 to 1903 she was culinary editor of the *American Kitchen Magazine*.

The *New York Herald* says: "Mrs. Lincoln did a work of the highest value to the country and did it in the beginning, in the face of serious opposition and ridicule."

An editorial in the *New York Evening Post* pays this tribute: "It is doubtful whether any other American writer has won so large or so devoted a public as Mrs. Mary J. Lincoln, author of 'The Boston Cook Book.' The direct influence she exercised through her own writings and lectures must be multiplied many times by the influence of her followers and competitors. Some time ago a well-known publisher was asked what books he would choose for an ideal selling list if he were given the whole of literature to pick from. The Bible and Mrs. Lincoln's book were the first two on his list."

The editor of the JOURNAL is anxious to obtain, from any of Mrs. Lincoln's former pupils, information, stories, or anecdotes which would throw light on the history of the early days of our work. The influence of Mrs. Lincoln in the Home Economics Movement, on the practical side, is comparable to that of Mrs. Richards on the scientific. All material sent in will be compiled for a later number of the JOURNAL.

Edith Baer, Colleague, Companion, Chief, Friend. With the passing of Edith Baer on November 3rd, home economics lost a staunch advocate and a tireless worker for its interests. As a colleague she was always ready to cooperate at any expense of time and effort; as a companion, always cheerful; as a chief, striving always to promote the

best interests of her students, but genuinely considerate of those working with her; as a friend, loyal, helpful, encouraging and loving. Her work was the controlling, compelling interest of her life, and, as a result, former students as well as associates wish to testify to the encouragement and inspiration which they have received from her. Miss Baer was graduated from Drexel Institute in 1904 and began her active career in Northampton, Mass. Later she returned to Drexel Institute as an instructor. After teaching at Drexel Institute several years she began her studies at Teachers College, Columbia University. After one semester's work as a student she was appointed on the staff and continued her studies while teaching. In the spring of 1914 she returned to her friends at Drexel Institute as their chief, and there her sterling qualities of genuineness, persistent endeavor to accomplish the best, kind considerateness and appreciation of the endeavors of others, marked her as a leader.

In 1918 she entered the stronghold of conservatism, the old College of William and Mary, Williamsburg, Va., to give the first course offered to women there and to establish a department of home economics. This was pioneer work indeed; but after two years, at the call of the University of Pennsylvania, she left a well established department to again lay foundations upon which she expected to see grow a department which would serve city, state, and country. One week before the close of summer school she was stricken, while hard at work. She expected then to be able to return at the opening of the fall session. Two months later she had gone. We in the work are left with a larger share of work to do because of her going, but with memories which will spur us to greater effort and will call forth our best.

SARAH M. WILSON.

Mrs. Caroline A. M. Hall, who for the last thirty years has been connected with the Drexel Institute, died very suddenly at her home in Philadelphia on November 15th. As a young woman Mrs. Hall was interested in the practical arts work which was carried on at the Y.W.C.A. After the death of her husband she came to Drexel Institute and took charge of the domestic arts work, and was later made Professor of Domestic Arts. During the years of her work, Mrs. Hall's influence was demonstrated, not only through her ability as a teacher and leader in the technical work, but also as a potent influence for good in the lives of all who came in contact with her.

The Textile Section. At the Swampscott meeting the Textile Section made plans for active leadership during the year 1921-22. Agnes Houston Craig, Chairman of the Section, has sent out a letter to textile specialists, and the JOURNAL wishes to emphasize her appeal by quoting from her letter as follows:

The aim of the section is to stimulate, among home economics educators, an active and appreciative interest in textile education so that it may properly attain to the high standard of excellence now recognized in the department of food and nutrition. It is hoped that every home economics specialist will put her full energy and influence into this effort to bring about better balance in home economics education. We confidently believe that every person whose special interest is some phase of the textile field will join the section. A big piece of work requires coöperation and enthusiastic support of its professional exponents. Above all it must be financed. Our membership goal for 1922 is five hundred paying members. The dues are \$1.00, and qualification for membership is membership in the A. H. E. A. and interest in the textile field. It will facilitate matters if you will send in your application and fee and at the same time constitute yourself a committee of one to gain other members. Thus the cost of a membership campaign may be minimized. Send the fees directly to the Section Treasurer, Miss Ethelwyn Dodson, Extension Department, University of California, Berkeley, California.

The chairman also requests that textile specialists contribute articles on successful or interesting work, giving constructive ideas, scientific facts, or new methods. These should be shared with the profession and are useful to consumers. This is imperative if we are to have our work properly represented in the JOURNAL OF HOME ECONOMICS. It is a necessary contribution to the development of our work. Each person should take the initiative, for time is valuable. Send the articles to the Associate Editor in Textiles, Miss Ruth O'Brien, Iowa State College, Ames, Iowa.

THE OPEN FORUM

Teacher-Rating as a Means of Improving Home Economics Teachers in Service. Home economics teachers as well as teachers of other subjects feel that one of the most acute educational needs of today is the training of teachers in service. The use of teacher-rating scales is suggested as a method of remedying this need. These scales will give the highest service when they are used cooperatively by teacher and supervisor.

Self-improvement rests directly upon self-criticism. The scale is an aid to the teacher because it provides one analysis of her teaching. It will reveal her strong points as well as her weak points. It usually leads to rapid growth on the part of the teacher because it directs her attention to problems in her

teaching. It brings about more effective cooperation between supervisor and teacher. The teacher should know in advance by what means and upon what grounds she is to be judged. The supervisor should make clear that the rating-card gives her a basis for helpful suggestion and for other means of helping her teachers to improve.

The following plan is submitted as one which should lead to improvement in home economics teaching. The supervisor should submit the tentative rating cards she has prepared for rating her teachers and for self-rating by themselves. The "Supervisor's Rating-card for Home Economics Teachers" and the "Rating-card for Home Economics Teachers" which follow are suggestive of the type of rating cards that may be used by supervisors and teachers of home economics.

SUPERVISOR'S RATING CARD FOR HOME ECONOMICS TEACHERS

Name.....Date.....

School.....

	1	2	3	4	5	6
<i>I. Technique and results of instruction:</i>						
1. Does teacher develop the initiative of her pupils?						
2. Does teacher arouse questioning attitude in her pupils?.....						
3. Does teacher provide for the developing of appreciations in her pupils?.....						
4. Is teacher developing responsiveness in her pupils?						
5. Is teacher developing self-direction in her pupils?						
6. Is teacher developing self-appraisal in her pupils?						
7. Is teacher developing self-control in her pupils?						
8. Is teacher developing co-operation among her pupils?.....						
9. Do the children turn out products of good quality?						
10. Do the pupils attend naturally and spontaneously to the work of the lesson?.....						
11. Does teacher develop skills in work requiring skill?						
12. Is teacher developing neatness and orderliness in her pupils?.....						
13. Does teacher ask thought-provoking questions?						
14. Are materials of the lessons adapted to the needs of the children?.....						
15. Does teacher use effective illustrative material?						
16. Does teacher correlate the work in home economics with that of the other school subjects?.....						
17. Does teacher finish projects which she begins?						
18. Does teacher experiment with new methods which have been suggested to her?.....						
19. Does teacher co-operate with the investigational work being done in the school?.....						

II. Classroom management:

1. Does teacher get her requisitions, records and reports in on time?.....
2. Does teacher plan for the systematic passing of supplies, tools, equipment, etc.?.....
3. Does teacher pay attention to the details of heat, light and ventilation?.....
4. Is material and equipment of room effectively arranged?.....
5. Is teacher a wise manager, that is, does she divide the time for the various phases and activities of the lesson in an economical and efficient manner?.....

III. Educational, social and personal qualifications:

1. Does teacher like her work?.....
2. What is the health and vigor of the teacher?....
3. What is teacher's attitude toward life in general?
4. Is teacher tactful?.....
5. Does teacher attract people to her?.....
6. Does teacher meet people easily?.....
7. Is teacher neat, attractive and trim in appearance?
8. Do pupils come to the teacher voluntarily for advice or help?.....
9. Does teacher go out of her way to advise or help students?.....
10. Is teacher loyal to her superior officers and fellow teachers?.....
11. Does teacher contribute to faculty meetings?..
12. Does teacher co-operate with the other teachers in school activities?
13. Is teacher acquainted with the home conditions of her pupils?.....
14. Does teacher take part in community activities?
15. Does teacher attend educational meetings?....
16. Is teacher a member of the American Home Economics Association?.....
17. Does teacher add to her professional library each year?.....
18. Does teacher read professional literature?.....
19. Does teacher subscribe for the JOURNAL OF HOME ECONOMICS?
20. Has teacher contributed to home economics literature?.....

Total score.....

Score:

- 5—Excellent. Question is answered by "yes."
 4—Good. Answer is more nearly "yes" than "no."
 3—Fair. Answer is about evenly divided between "yes" and "no."
 2—Poor. Answer is more nearly "no" than "yes."
 1—Unsatisfactory. Answer is "no."
 0—No record.

Check in the column which describes the answer to the question.

SELF-RATING CARD FOR HOME ECONOMICS TEACHERS

Name.....Date.....

School.....

	1	2	3	4	5	0
<i>I. Technique and results of instruction:</i>						
1. Are you developing the initiative of your pupils?						
2. Do your pupils ask relevant questions?.....						
3. Do you provide for the developing of appreciations in your class work?.....						
4. Are your students responsive?.....						
5. Do your pupils do their laboratory work without assistance?.....						
6. Are your pupils able to recognize good or poor results and form conclusions?.....						
7. Are your pupils developing self-control as shown by their attention to their own business?....						
8. Are your pupils developing co-operation as shown by good team work as a group?.....						
9. Do your pupils turn out products of good quality?						
10. Do your pupils attend naturally and spontaneously to the work of the lesson?.....						
11. Do you provide time for practice or for developing skills?.....						
12. Do your pupils leave the laboratory clean and in order?.....						
13. Are your questions thought-provoking?.....						
14. Do you select the materials for your lessons in relation to the children's needs?.....						
15. Do you use worth-while illustrative material? ..						
16. Do you correlate your work with that of the other school subjects?.....						
17. Do you carry out or complete projects which you start?.....						
18. Do you experiment with new methods in teaching which others have suggested?.....						
19. Do you co-operate heartily with any investigational work being done in your school?.....						

II. Classroom management:

1. Are your requisitions, records and reports in on time?.....
2. Is the passing of supplies, tools, equipment, etc., done systematically?.....
3. Do you pay attention to the details of heat, light and ventilation?.....
4. Have you arranged effectively the material and the equipment in the room?.....
5. Do you divide the time for the various phases and activities of your lessons wisely?.....

III. Educational, social and personal questions:

1. Do you like your work?.....
2. Are you in good health?.....
3. Do you have the proper attitude toward life in general as evidenced by your disposition, your sense of humor and your ability to be cheerful and happy?.....
4. Are you tactful in dealing with pupils, colleagues and patrons?.....
5. Are you interested primarily in what other people are doing?.....
6. Do you meet people easily?.....
7. Do you recognize the importance of being "well-groomed"?.....
8. Do your pupils come to you voluntarily for advice or help?.....
9. Do you go out of your way to advise or help students?.....
10. Are you loyal to the school administration?.....
11. Do you contribute to faculty meetings?.....
12. Do you co-operate with other teachers in school activities (committee work, Parent-Teacher Associations, etc.)?.....
13. Are you acquainted with the home conditions of your pupils?.....
14. Do you take part in community activities?.....
15. Do you attend educational meetings?.....
16. Are you a member of the American Home Economics Association?.....
17. Do you add to your professional library each year?.....
18. Do you read professional literature?.....
19. Do you subscribe for the JOURNAL OF HOME ECONOMICS?.....
20. Do you contribute to home economics literature?.....

Total score.....

Score:

5—Excellent. Question can be answered by "yes."

4—Good. Answer is more nearly "yes" than "no."

3—Fair. Answer is about evenly divided between "yes" and "no."

2—Poor. Answer is more nearly "no" than "yes."

1—Unsatisfactory. Answer is "no."

Check in the column which describes your answer.

In submitting the rating-cards to her teachers the supervisor should explain them as fully as possible and have the explanation followed by a free discussion of the card. The supervisor should try to secure a mutual understanding of the purpose of the rating and the meaning of each question comprising the rating-card.

The teacher should be given a copy of the "Rating-card for Home Economics Teachers" and be asked to rate herself at the end of the first six weeks of teaching. At the same time the supervisor should rate the teacher, using the "Supervisor's Rating-card for Home Economics Teachers." After these ratings have been made by both supervisor and teacher they should come together for a personal conference and compare the ratings. The supervisor and teacher should go over the rating-card question by question, giving and accepting suggestions from each other. Wherever possible the supervisor should allow the requests for help or desire for suggestions to originate in the teacher but if the teacher fails to see her need, then the supervisor should not hesitate to give the suggestion needed. Certain definite phases of the work should be chosen for improvement during the next six weeks of teaching.

At the end of the twelfth week of teaching, both teacher and supervisor should again make ratings, and a second conference be held. At this time they should also compare the ratings made at the end of the sixth week of teaching with those made at the end of the twelfth week and note the growth of the teacher in this period. If these ratings are made at the end of each six weeks of teaching both the teacher and the supervisor will have secured "objective evidence" for judging the improvement of instruction in home economics. The teacher will feel that her supervisor is genuinely interested in her and her teaching and that the supervisor's judgment of her and her work is not one of personal judgment only.

At the beginning of the second semester a committee of teachers might be appointed to revise the present rating-card or to construct a new one to be adopted by teachers and supervisor.

ADAH H. HESS,
Fellow in Home Economics
University of Chicago.

Note: A bibliography for the study of teacher-rating is on file in the Journal Office and will be loaned to anyone sending 10 cents in stamps.

BOOKS AND LITERATURE

Revaluations. (A new edition of a paper read at a Lake Placid Conference.) By CAROLINE L. HUNT. Boston: Whitcomb and Barrows, 1921. Price, 25 cents.

This is an ideal little booklet to give to a woman who is perplexed by the necessity of fitting new desires with old duties. Some thing must be sacrificed and to the puzzled housewife it is often a question of which demand to fill and which to ignore. Although it is twenty years since I heard the matter in this booklet first presented, it has always been remembered for its fresh outlook which delighted me anew when I re-read it today

Miss Hunt lays down the principle by which one may test the values of the old and the new. For her statement of the aim of life she chooses the quotation from Edward Carpenter, "To create round oneself an external world which answers to the world within is indeed a great happiness and fullness of life."

She succinctly indicates that "freedom for expression pre-supposes health, efficiency, and opportunity." She proceeds to expose the declining value of customs which keep us from attaining freedom in these three directions, and, finally, she gives us a standard of judgment. "Of those material things which complicate our lives we may say: annual income of energy following upon their possession exceeding annual outgo in its complication of life; result, freedom. Annual income less than annual expenditure; result slavery. 'The blossom is blighted, the leaf is withered, the God of Day goes down upon the dreary scene and in short we are forever floored,' and there upon the ground we sit, slaves to our possessions."

The conclusion of the whole matter is that we should rid ourselves of "that distraction of mind and confusion of values which now

prevent our appreciation of the really beautiful." To all who desire to do this Miss Hunt's *Revaluations* will prove suggestive and stimulating.

ALICE A. CHOWN.

A Laboratory Handbook for Dietetics. By MARY SWARTZ ROSE. New York: The Macmillan Company, rev. ed., 1921, pp. 156. \$2.10.

This is the new name under which appears the revised edition of the former *Laboratory Manual of Dietetics*. There is undoubtedly no book which has been so extensively used in the school laboratory and in the diet kitchen as has this one, and the new edition with its additions and revisions will be found to be even more usable.

One notable addition is the discussion of the relation of vitamins to the continued well-being of children and adults. Information to date on the distribution in common food materials of each of the three vitamins is very conveniently summarized in a table to indicate the relative richness of foods in these substances. An objection which might be made to including such a table in a book which probably will not be revised again for ten years is that the mass of vitamin information is still too shifting.

With so much attention directed at present toward child nutrition, it is gratifying to note a more extensive treatment of this subject, including data for estimating children's food requirements and also charts of height and weight relationship and standards for growth.

More recent knowledge of adults' energy requirement and data for estimating it is included. Especially to be noted is the newer data on energy requirement of women at various household tasks. The modifications in the dietary standards for calcium,

iron, and phosphorus made by recent experimental work are given. It is fortunate that there are included in the book the tables giving the mineral content of food materials which have been so usable in Sherman's second edition of *Chemistry of Food and Nutrition*.

Several additions aimed to assist in the mechanical processes of calculation of nutritive value are: Dr. A. R. Rose's "short-cut" method for dietary calculations of large quantities of foods, some metric and English equivalents, the legal standard weights for the bushel, and the corresponding weight in ounces of the cupful of common food materials.

As before, the tables of composition of foods occupy a large space in the handbook. The constant user of these tables finds with regret that they have not been reset, listing all foods alphabetically in one table. The division into two tables in the first edition was an annoyance and this fault is added to in the second by including still a third table of the same nature. This third table of sixty or more foods fills in many of the missing items of the original ones. One is glad to find included also the energy content of some confectioners' goods originally reported by Benedict and Benedict.

With the same understanding of laboratory needs which characterized the first edition and made it so indispensable, the author has made the revisions and addition which will keep it the handbook of dietetic information par excellence.

SYBIL WOODRUFF,
University of Kansas.

The School Lunch: Its Organization and Management in Philadelphia. By EMMA SMEDLEY. Published by the author, 6 East Front Street, Media, Pa., 1920, pp. 164. \$3.00.

This book gives in detail the equipment and management of the high and elementary school lunch room in Philadelphia. Since Philadelphia has developed a school feeding system founded on absolutely sound businesslike principles, organized with the right relationship between the Board of Education and the School Lunch System, this book

should help cities and towns to avoid the mistakes that are ordinarily made in introducing the serving of hot lunches in public schools. While doubtless the complete plan of organization will be adopted by few schools, at least in the beginning, and may not in all cases be feasible, the book presents an ideal plan to work toward, and there are many practical suggestions as to equipping, purchasing supplies, planning menus, serving, and accounting, that will be useful to all who are directly interested in providing lunches for children in fairly large schools.

The question of the discussion of feeding of the elementary children is briefer than the importance of feeding children of this age might indicate as being desirable in view of the number of underweight children that all health surveys are discovering. The school lunch is served at the morning and afternoon recess with a noon lunch served to small numbers of children whose parents work or who cannot go home for some other reason. With the limited menus suggested, the wisdom of serving a two cent portion of the hot substantial dish at noon might be questioned.

Ada Z. Fish has contributed a chapter called "The School Lunch and Classes in Cookery" showing the possibility of coöperation between the Home Economics Department and the School Lunch Organization in a way that will help the lunch room, and give the home economics students experience with cooking in family quantities without having the preparation of such food develop into a monotonous routine and interfere with the educational purpose of the home economics course.

ESSIE M. HEYLE,
University of Missouri.

Clothing: Choice, Care, Cost. By MARY SCHENCK WOOLMAN. Philadelphia: J. B. Lippincott Company, 1920, pp. 289. \$2.00.

During the past few years a number of excellent books on the subject of textiles and the cost of living have been published. These books have given little help, however, on the choice of clothing. It has needed a textile expert and clothing specialist to gather the necessary material and to make the right

emphasis on this important subject. Mrs. Woolman has accomplished the task in her book, *Clothing: Choice, Care, Cost*.

The book is divided into two parts with four chapters in the first, devoted to clothing of wool and worsted, cotton, silk, and linen. In each chapter enough detail is given to show the relation of the cost, appearance, and durability to the manufacturing processes. The aim throughout is to give help and encouragement to the "new consumer" whom Mrs. Woolman has presented in the opening section of the book.

The second section is an application of the first with special emphasis on the choice and care of clothing. The names of the chapters tell their own story: Clothing and Health, Intelligent Shopping, Serviceable Clothing, The Clothing Budget and the Wardrobe, Repair and Renovation, Dyeing, Laundry and Spot Removal, Planning for Clothing Progress.

ELLA J. SPENCER,
Simmons College.

The Present Status of Vitamines. By KATHARINE BLUNT and CHI CHE WANG.

The demand for the reprint of the article that appeared in the JOURNAL, March, 1921, was so great that a second printing has been made, and the pamphlet may now be obtained from the JOURNAL Office at 15 cents a copy; orders of 15 or more, 10 per cent discount.

Teaching Social Science in High Schools and Industrial Classes. By RUTH MARY WEEKS, JOHN R. COMMONS, and FRANK M. LEAVITT. Published by the Vocational Education Association of the Middle West. Copies may be obtained by addressing L. W. Whalstrom, 1711 Estes Ave., Chicago, Ill. Price 20 cents.

The authors of this monograph are now presenting this revised report in printed form for the use of those interested in teaching social science in schools below college grade. Special emphasis is placed on the continuation school, and three methods of presenting the course are suggested as possibilities: "a special class in social science; use of such subjects as English or mathematics for incidental instruction as to social problems; or general assembly hall programs designed to develop social ideals." The last is not recommended, although it has met with success in some schools.

A detailed outline of a course is given but it is intended that the teacher will select from it such parts as are adapted to the students' experience. A sample lesson is illustrated, and the relation of the course to other subjects and to the whole course of study is discussed. An extensive bibliography, arranged according to the lesson topics, completes the report.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture:

Baking in the Home. Farmers' Bulletin 1136.

Floors and Floor Coverings. Farmers' Bulletin 1219.

Heat Production of Honeybees in Winter. Bulletin No. 988.

Home Canning of Fruits and Vegetables. Farmers' Bulletin 1211.

How to Select Foods. I. What the body needs. By Caroline L. Hunt and Helen W. Atwater. Farmers' Bulletin 808, revised, 1921.

Linters. Circular 175, 1921.

Making American Cheese on the Farm. Farmers' Bulletin 1191.

Milk and Its Uses in the Home. Farmers' Bulletin 1207.

Operating a Home Heating Plant. By A. M. Daniels. Farmers' Bulletin 1194.

Organization and Results of Boys' and Girls' Club Work. Circular 152.

The Organization of Rural Community Buildings. Farmers' Bulletin 1192.

Plans of Rural Community Buildings. Farmers' Bulletin 1173.

Pork on the Farm. Farmers' Bulletin 1186.

The Well Planned Kitchen. Circular 189.

Issued by the Department of the Interior, Bureau of Education:

Part-Time Education of Various Types. Bulletin 1921, No. 5.

Suggestions for Health Teaching in the Elementary Schools. Health Education No. 10.

Your Opportunity in the Schools. Health Education No. 9.

Issued by the U. S. Department of Labor, Children's Bureau:

Administration of the First Federal Child-Labor Law. Bureau Publication No. 78.

The Employment-Certificate System. Bureau Publication No. 56 (Revised).

Save the Youngest. Children's Year Follow-up Series No. 2., Bureau Publication No. 61 (Revised).

Issued by the U. S. Department of Labor, Women's Bureau:

Health Problems of Women in Industry. Bulletin of the Women's Bureau No. 18.

Issued by the Federal Board for Vocational Education:

Child Care and Child Welfare. Bulletin No. 65, Home Economics Series No. 5.

The Home Project: Its Use in Homemaking Education. Bulletin 71, Home Economics Series No. 6.

Plant and Equipment for Vocational Classes in Home Economics. October 10, 1921.

Issued by Iowa State College of Agriculture:

Baby's Clothes. Home Economics Bulletin No. 29.

Buying and Testing Textiles for Home Use. Home Economics Circular No. 28.

First Lessons in the Care of Milk. Home Economics Circular No. 26.

Food for the Family. Home Economics Bulletin No. 10.

Planning the Costume. Home Economics Circular No. 25.

Use and Alteration of Commercial Patterns. Home Economics Circular No. 27.

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Apple Candy—a Commercial Use for Cull Apples. Utah Sta. Bulletin 179.

The Art of Table Setting. By Claudia Quigley Murphy, 41 Union Square West, New York.

Can Preventable Waste of Natural Gas in Home be Prohibited? By Samuel S. Wyer, Hartman Bldg., Columbus, Ohio.

Control of Garden and Household Insects. North Dakota Agricultural College.

Corrective Diets. Bulletin of Woman's Community Council, Minneapolis.

A Dietary Study of Some Kansas Institutions. University of Kansas, Lawrence.

Economy in Feeding the Family. Why we Must Have Vegetables. Conn. State Sta. Bulletin of Information 11.

Handbook of Social Resources of the United States. American Red Cross, Washington, D. C.

Jellies, Jams and Marmalades. Connecticut Agricultural College, Storrs, Bulletin No. 39.

Observations on Deficiency Diseases in Labrador. By Vivia Appleton. Reprint from *Amer. Jour. Pub. Health*, July, 1921.

Opportunities for Girls Graduating from Home Economics Courses. University of Wyoming Bulletin, No. 1B, Laramie, Wyoming.

Outline for the Teaching of Nutrition in Elementary Grades. Merrill-Palmer School, Detroit.

Sea Island Cotton in St. Croix. Virgin Islands Sta. Bulletin 1.

Utilization of Calcium Compounds in Animal Nutrition. Ohio Sta. Bulletin 347.

Vitamins and the Daily Diet. University of Arkansas, Fayetteville, Bulletin No. 176.

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NEWS FROM THE FIELD

The Summer Meeting in Corvallis, Oregon. There are many attractive routes by which the home economics women of the country can reach the Pacific Coast and Corvallis, Oregon, for the Annual Meeting of the American Home Economics Association, August 1-5.

In deciding upon the route, it is necessary first to decide through which "gateway" they desire to go—Chicago, St. Louis, or New Orleans. From these points the summer excursion rates are granted. It is next necessary to choose the route; each route has advantages and disadvantages. Of the latter, no agent will advise the excursionist.

After the coast is reached, at Vancouver, Seattle, Portland, San Francisco, or Los Angeles, there is little choice of routes. The Southern Pacific is the only North and South coast line. While a boat may be taken from San Francisco to Portland, it is a pity to deny one's self an opportunity to see Shasta Mountain as it is seen if the right train is chosen.

It is suggested that those anticipating the trip supply themselves with a good pocket map of the United States (*not* a railroad map) and then consider the following suggestions.

GOING

A. When *time* is an element to be considered:

(a) Chicago gateway:

(1) Via Chicago, Northwestern and Union Pacific. Leave Chicago 9:30 p.m.; arrive Portland 7:30 p.m., 70 hours later, with an afternoon spent coming down the Columbia River. Or, leave Chicago 10:30 a.m.; arrive Portland 8:30 a.m., 70 hours later. In the first case the tourist should remain in Portland over night. In all cases the plans should be such that the invitation of the Portland citizens for the Columbia Highway drive may be accepted.

(2) The other northern routes are about 12 hours longer except the one going down the north bank of the Columbia. This route loses to the tourist the beauties of Mount Rainier and the Puget Sound country.

(b) St. Louis gateway: The Burlington Route. Leave St. Louis 9:03 a.m., e.g. Monday; arrive Portland 8:10 a.m., Friday, if routed on S. P. and S. or in evening of same day if routed via Seattle. This latter routing can always be secured, and entails only the extra cost of Pullman accommodations from Seattle to Portland.

B. Naturally, northern routes are cooler, and, if time allows, some attractions should be seen en route. The following are possibilities:

Yellowstone National Park Route. Northern Pacific and C. B. and Q. Leave Chicago 10:10 a.m., e.g. Sunday; arrive Gardiner (Yellowstone) 10:15 a.m., Tuesday; allow 5 days in Yellowstone. Leave Gardiner 7:30 p.m., Sunday; arrive Tacoma 8:10 a.m., Tuesday; 3 day trip to Mt. Rainier and Paradise Valley. Leave Tacoma—Southern Pacific—11:15 p.m. Friday; arrive Portland 6:45 a.m., Saturday. Take Columbia Highway drive as guest of Portland's Business and Civic Clubs. Go to Corvallis Sunday.

There are 3 different routes by which Corvallis may be reached from Portland: 1. *Steam car* from same station at which tourist arrived by above schedule. Good trains at 9:00 a.m. and 4 p.m. that connect at Albany with local. Corvallis is 12 miles from Albany which is on the main line of the Southern Pacific. 2. *Southern Pacific Electric*—same station, 7:35 a.m., 1 p.m., 4:05 p.m. 3. *Oregon Electric*—Great Northern Station, 8:30 a.m., 10:45 a.m., 4:45 p.m.

Glacier National Park Route. Great Northern and C. B. and Q. Leave Chicago 10:10 p.m., e.g. Sunday; arrive Glacier 8:12 p.m., Tuesday. Or leave St. Paul 10:45 p.m., Sunday; arrive Glacier 8:17 a.m., Tuesday; 4 or 5 days in Glacier. Leave Glacier 8:17 a.m., Saturday;

arrive Seattle, 8:45 a.m., Sunday. Spend day in Seattle. Go to Mount Rainier Monday; 3 days in Paradise Valley. Complete trip according to preceding schedule.

Denver, Estes Park, Salt Lake City, and Yosemite National Park.

Chicago to Denver via Burlington. Leave 11 p.m., e.g. Sunday; arrive Denver 7:30 a.m., Tuesday; visit Denver until afternoon. Leave Denver 2:30 p.m. over Colorado and Southern; arrive Loveland 5:14 p.m.; take auto for Estes Park—lovely sunset ride of 30 odd miles; 3 days in Estes Park. The round trip tickets purchased in Denver to Estes Park can be used to return by another route.

Denver to Salt Lake City over Denver and Rio Grande Route—"Scenic Limited" train. Leave Denver 8:15 a.m., Saturday; arrive Salt Lake 12:25 p.m. Frequent trains between Salt Lake and Ogden. Leave Ogden—Southern Pacific Route—1:20 p.m., Sunday; arrive Sacramento 10:40 a.m., Monday; detour of Yosemite National Park—4 days. Leave El Portal 8:30 a.m., Friday; arrive Oakland Pier 7:30 p.m., in time to cross the Bay and return. Leave Oakland Pier 10:20 p.m.—this insures several hours in view of Mount Shasta; arrive Albany, Oregon, 4 a.m., Sunday. Take auto or steam car 12 miles to Corvallis, or continue on train to Portland and take Columbia Highway drive. To leave the train at 4 a.m. is a rather bad finale, but the view of Shasta justifies a few hours less sleep.

These are but a few of the many routes and side trips that may be taken in going to the coast.

LINGERING IN OREGON

There are many opportunities for real rest and for alluring new experiences for those who choose to remain on the coast.

Inexpensive camping trips at the foot of glaciers or by mountain torrents or on the beach can easily be arranged. Tramping into uninhabited sections, mountain climbing, and automobile excursions are all easily accomplished. Essential to women for real comfort and pleasure on the coast are a warm sweater, good tramping shoes, either trousers or a short warm skirt, and a dark (preferably woolen) waist or shirt.

RETURNING

When purchasing tickets insure a different route returning.

Include Mount Rainier in your trip if possible. To go to the West and miss Rainier would be missing one of the greatest attractions.

The Canadian Pacific route will entice many of the travelers on their return trip.

Parties can be made up for a ten-day trip to Alaska by steamship. It is possible to combine the Alaskan trip and Canadian Pacific trip or any rail trip from either Seattle or Portland.

A reversal of any of the west bound routes will prove interesting.

ADVANCE PLANS

The National Park Service, Department of the Interior, Washington, will furnish pamphlets relating to the various National Parks in which the individual is interested, i.e. Yellowstone, Colorado National, Yosemite, Mount Rainier, and Glacier.

Those desiring to go to Alaska should write early for folders from the three steamship lines accommodating summer tourists. It is absolutely necessary to make reservations far in advance.

The Travel Committee is arranging for a special train via the Burlington and Great Northern route with a two day stop over in Glacier National Park, thence to Corvallis via Seattle.

All those interested in the special train should write at once to the chairman of the Travel Committee, Miss Nina Streeter, 1370 East 54th Street, Chicago, Illinois.

The Fourth Annual Meeting of the American Dietetic Association was held at the Hotel La Salle in Chicago, October 24-27, with a registration of about 500.

Throughout the convention the close relationship between dietetics and medical, nursing, and social service became more evident. The three-day program included papers and discussions on administrative problems, teaching problems, dietotherapy, and social service.

Mary A. Lindsley, manager of the Grace Dodge Hotel for Women, in Washington, presided over the session for the discussion of equipment for the institution and the home. Margaret Proctor of the Y. W. C. A. discussed improper arrangements of equipment. Others on the program were George A. Smith of the Chicago Range Company and Agnes Gleason, manager of the Parkway tea room in Chicago.

The social service section meeting and round table were a credit to the chairman, Lucy Gillett of the nutrition bureau. Association for Improving the Condition of the Poor, New York City. Sophonisba Breckinridge, associate professor of sociology, University of Chicago, speaking on the question "To what extent should racial customs enter into any Americanization scheme?" said, "to the greatest extent rendered possible by the knowledge, training, and sympathy of the persons directing the Americanization efforts." Following Dr. Breckinridge's talk, four papers were given on "Dietary Customs of Various Nationalities."

At the meeting of the section on education under Dr. Ruth Wheeler, professor of nutrition, University of Iowa Medical College, standardized courses for nurses and dietitians were presented. "What Nurses Need to Know about Dietetics" was the subject of a paper by Helena MacMillan, principal of the school of nurses of the Presbyterian Hospital, Chicago. An outline for a student nurses' dietetics course by use of the project method was presented by Katharine Fisher of Columbia University. Student dietitian courses were presented by Octavia Hall of the Peter Bent Brigham Hospital,

Boston, and Mary Foley of the Rochester Hospital, Rochester, Minn. Abby Marlatt, University of Wisconsin, gave an outline for two- and four-year preliminary courses for dietitians.

At the dinner Monday evening, Mrs. Mary De Garmo Bryan, president, outlined the objects of the association, the work that had been done during the year, and plans for the coming year. The convention would do much, she said, toward convincing the public of the fact that the dietitian is a professional person whose training demands utmost care. During the past year the association has been instrumental in installing two courses in dietetics for nurses and a preliminary course for the dietitian in universities, colleges, and technical schools. Next year a committee will compile a list of hospitals and classify them according to size, equipment, and dietary standards. With this list it will be possible for students to choose hospitals offering the best training.

Harriet Vittum of Northwestern University Settlement gave a talk on "Professional Spirit." Madison E. Bentley, professor of psychology at the University of Illinois, in discussing diet and its relation to mood, said: The reflective and the anticipatory moods display only a casual relation to the visceral functions, but two other varieties, the quiescent—gloom, tranquillity, good humor—and the turbulent—petulance, restlessness, gaiety—draw largely in their origin upon those organic sensations aroused by the processes of digestion and secretion. Dr. C. P. Howard, professor of internal medicine, University of Iowa, in his paper on "The Sphere of the Dietitian," said that her duty is the planning of diets and not diagnosing diseases. Professor A. J. Carlson of the University of Chicago in his address referred to the dislike of certain food as a psychic idiosyncrasy and said that one of the most important tasks of the dietitian is the removal of these imaginary dislikes, especially with children. Dr. Sidney Kuh, a neurologist of Chicago, spoke of the importance of psychic influences in the assimilation of foods, with the neu-

rotic. A great deal of harm is done in cases of so-called nervous dyspepsia by too restricted a diet.

One of the best attended meetings was that of the section on dietotherapy, under the chairmanship of Rena Eckman, University of Michigan Hospital. Dr. Amy Daniels of the Child Welfare Research Station, University of Iowa, in her talk on "The Dietary Needs of Children," emphasized the importance of a dietitian trained in children's dietetics. Dr. O. P. Kimball of the Medical Department of Cleveland Clinic, gave a paper on the "Prevention of Simple Goitre," in which he discussed the practical application of prevention of simple goitre in man as carried out through the public schools of Ohio. Dr. R. T. Woodruff, assistant professor of medicine, University of Chicago, in his paper on "Newer Ideas on the Diet Management of Diabetes and Their Practical Working Out in the Hospitals," told of the work in the Metabolic Clinic at the Presbyterian Hospital in Chicago. Mr. John Street of the National Canner's Association talked on "Food Poisoning." Mrs. Gertrude Gates Mudge, nutrition bureau, American Red Cross, called attention to the necessity of working with the family as a whole and of including more work with the child of pre-school age.

At the business meeting the following officers were elected for the ensuing year: Mrs. Mary de Garmo Bryan, editor of the *Journal of Home Economics*, president; Helen Pope, first vice-president; Octavia Hall, second vice-president; E. M. Geraghty, University of Illinois, secretary; Ellen Gladwin, Jefferson Hospital, Philadelphia, treasurer.

Ruth Wardall, professor of home economics, University of Illinois, was the delegate of the American Home Economics Association.

Conference of the City Supervisors. Dr. Tigert, Commissioner of Education, has called two conferences of city supervisors of home economics. The first conference is in New York City, beginning the evening of

February 16 and extending through February 17 and 18. All home economics supervisors in the region east of Pittsburgh, Pa., and north of Richmond, Va., are especially invited. The meetings will be open to all women. The topics chosen will be those of especial interest to city supervisors of home economics. On February 16 there will be a get-together supper, followed by addresses. The meetings of February 17 will be held at Pratt Institute, and those of the 18th at Teachers College. The second conference will be held March 3 and 4 in Indianapolis or Chicago. Final plans will depend upon the expressed wishes of the majority of supervisors in the territory west of Pittsburgh, east of Jefferson City, Mo., and north of Memphis, Tenn.

Correspondence concerning these conferences is in charge of Mrs. Henrietta W. Calvin, Specialist in Home Economics Education, Bureau of Education, Washington, D. C.

Home Economics in Business. At the last annual meeting of the A. H. E. A., in Swampscott, the Council approved the formation of a committee of home economics women in commercial fields, instructing them to prepare a program for the Corvallis meeting looking toward the formation of a section at that time. This represents a new development in the activities of the Association and needs careful consideration. Business organizations are establishing home economics departments offering information and assistance which may be valuable to the teacher or extension worker. Their funds often permit of more comprehensive work than can be done by the institution. Information in regard to work now being carried on by various commercial organizations will be published in the *JOURNAL*, in such cases as have been approved by a number of home economics teachers.

One of the associations to establish an educational department was the American Washing Machine Manufacturers' Association with headquarters in Chicago. This association, composed of practically all manufacturers of washing machines, had in

mind the development of the market for washing machines by acquainting women with the value of a machine. A large part of the work has been done through coöperation with home economics departments and extension divisions, planning the work on a plane which would allow the educational institution to use the resources of the association.

Reliable information is furnished on laundry supplies, methods of laundering, and the proper installation of home laundering equipment. Complete exhibits of all kinds of washing machines are placed at state meetings so that the home economics teachers or home demonstration agents may learn first hand the points to be considered in the selection of a washer. The information, adapted to local conditions, is then carried to the homes of the state by the extension workers. Assistance has been given by this department in planning courses of study adapting the laundering information to the work given in the care of clothing and household management. Twenty states now have a definite program under way in coöperation with the Manufacturers' Association and twenty other states have asked for such help for the coming year. A series of bulletins "Laundering at Home" dealing with the various problems of laundering was published in June, 1921. Three thousand home economics teachers are using these bulletins.

Training schools for demonstrators and salesmen are being held, so that reliable information will be given the housewife through this channel. The Manufacturers' Association is anxious to have suggestions from home economics departments in planning the work of their educational department.

Shoes. Ignorance in regard to materials of which shoes are made, and the selection of improper and harmful types of shoes, result in economic loss, inefficiency, irritability, and physical deformities, in the opinion of Dr. Henry A. Gartner, Department of Orthopedic Surgery, Long Island College Hospital, Brooklyn, N. Y. Even

the so-called orthopedic shoes are not constructed on correct anatomical lines. Dr. Gartner has persuaded certain manufacturers of children's shoes to construct shoes according to his findings in the study of hundreds of children. He has recently completed an accurate study of 100 children wearing properly made shoes from the time they began to walk until they were four years of age. Dr. Gartner urges education in the buying of correct and suitable shoes.

ARIZONA

The Home Economics Section of the Arizona State Teachers Association held a meeting in Phoenix, November 21 to 23, 1921. Mildred Weigley, Head of the Home Economics Department, University of Minnesota, was the principal speaker. Miss Weigley was traveling through the western states on a speaking tour in the interest of the American Home Economics Association.

Home Economics Equipment. Lulu R. Lancaster of the Home Economics Department, University of Arizona, has contributed some very valuable and practical suggestions on home economics equipment which have recently been published in bulletin form by the Federal Board for Vocational Education.

DISTRICT OF COLUMBIA

The National Catholic Service School for Women opened the school year in its fine new quarters 2400 Nineteenth Street, N. W., Washington, D. C., on November 1st. There are a number of buildings, and room for others. The grounds are extensive and attractive, overlooking Rock Creek Park and the near-by region.

Courses offered include Economics, Ethics, Social Case Work, Social Work, and Civil Law, The Charities of the Catholic Church, Contemporary Social Welfare Organizations, Sociology and Social Psychology, Public Health, and Home Economics. Miss Helen Cronin is in charge of the latter. The two year course of training is designed primarily for giving the best possible mental equipment to social workers, but it also aims to train leaders for civic life.

Students must be college graduates of mature judgment and character. At the present time there are enrolled in the school young women from the United States, France, Belgium, Poland, the Philippine Islands, and Central America.

INDIANA

The State Home Economics Association meeting was held in Indianapolis, October 20-22, with Ivah Rhyan, president, presiding. The forenoon program was given over to a discussion of the proposed new State Course of Study on which our state council has been working for a year. The discussions were as follows: High School, Proposed Required Course, Florence Blazier, Assistant Professor of Home Economics, Indiana University; Proposed Elective, Ada Hillier, Supervisor Home Economics, South Bend; Grades, Mary Beeman, Supervisor Home Economics, Muncie, Indiana.

At the noon luncheon, Mrs. R. A. Acher, a housewife and mother, of Terre Haute, spoke on, "What We Need to Fit Our Girls for Home Making."

In the afternoon we were joined by the vocational home economics teachers in the following program: Diet in Relation to Health and Disease, Margaret Sawyer, Director of Nutrition, American Red Cross; The Home Spirit in Home Making, Maude Adams, Ohio State University; Some Problems in Home Economics, Helen Goodspeed, former State Supervisor of Wisconsin.

The Association voted to organize Indiana for affiliation with the American Home Economics Association and plans for that are being worked out to be presented at next year's meeting.

IOWA

Iowa State College. Increasing interest is manifest in graduate work in Home Economics. Dr. Elizabeth Miller, who has returned after a two year leave of absence for study, is in charge of this work. The four newly appointed fellows in home economics are: Ruth Spencer, Applied Art; Frances Newell, Household Science; Lois Rath,

Household Art; Lydia Jacobson, Teacher Training.

A number of the members of the Home Economics Faculty are availing themselves of the opportunity to take a course in Improvement of Methods in College Training, under Dr. Miller.

Gertrude Linn has joined the Extension Staff as Specialist in Household Management. The Staff now numbers nine.

The Work in Institutional Administration, which was established a year and a half ago is steadily growing in interest and numbers. The Courses offered are Institutional Foods (the classes serve 40 people daily), Institutional Buying (which includes the buying of equipment and supplies), Institutional Management and Institutional Field Work. Eda Lord Murphy is in charge of the work.

Extension Service. The Farm Bureau women of Iowa have been more eager than ever during the last few months to learn how to be of service to their homes and their communities. This spirit and interest were crystallized in the form of training schools for leadership. During the last seven months, thirty-eight all-day training schools have been conducted by the state leaders in seventeen counties, and many of the schools reached every township in the county. The program took up the following phases of Farm Bureau work: Community Singing, The Purpose of the Meeting, The Farm Bureau for the Farm, Home, and Community, The Township Organization for Farm Bureau Work, Steps in Project Work, Duties of Township Officers, Training Schools for Local Leaders and Project Leaders, Value and Duty of Leaders, Records and Reports, Value of Publicity Work.

NEW ENGLAND

The New England Home Economics Association instituted last year the custom of holding one of its meetings each year in some other place than Boston. In conformity with this plan the Association accepted, for the meeting of November 12, the invitation of the Housewives League to meet in Providence. Sarah Louise Arnold, Dean Emerita of Simmons College, received, as speaker,

a most enthusiastic welcome. There is no question but that this plan for meeting will do much to stimulate interest in the general plans of the association.

The Housewives League of Providence is an organization of about one thousand women, whose object is furthering the welfare of the home. Early in their work they realized the need for a knowledge of nutrition, and employed a dietitian to teach groups of women the essentials of feeding their families. The work was carried to the schools, and the classes for the mothers were combined with work with undernourished children. Because of the interest aroused, they were able to form a Coöperative Nutrition Bureau last year, with Mrs. Parnell E. Fisher, chairman of the Housewives League Dietetic Committee, as chairman. Other organizations associated with the bureau are the Providence Tuberculosis League, the Branch Avenue Neighborhood Center, the Parent Teachers Association, the Child Welfare Departments of the State and City Boards of Health, and the State Home Economics Extension Department. From the single dietitian with her family visiting, the work now includes regular meetings, in the school hours, of all underweight children, home visits with their parents, and work with twenty-two nutrition groups.

In addition to the work with the Rhode Island Home Economics Association the League is in touch with the New England Home Economics Association, and many of its members attend the meetings of this organization.

Massachusetts Minimum Wage Commission, in connection with a wage award to candy makers, placed living requirements of a self-supporting woman at \$13.50 a week, itemized as follows: Board and room, \$8.50; clothing, \$2.50; laundry, 20 cents; carfares, 40 cents; doctors and dentist, 50 cents; church, 15 cents; self-improvement, recreation, and community interests, 50 cents; vacation, 20 cents; reserve for emergencies, 30 cents; incidentals, 25 cents.

NEW YORK

New York State Home Economics Association. The annual meeting of the New York State Home Economics Association was held in Buffalo, November 21-22, during the meeting of the State Teachers' Association, with the Vice President, Edith M. Barber, Director Syracuse Home Bureau, presiding. It was unanimously voted to become affiliated with the American Home Economics Association under the new regional plan.

Edna N. White, Director of the Merrill-Palmer School, Detroit, Michigan, who has recently returned from a survey of home economics conditions in Europe, spoke on "Field News From the Other Side." In addition the following program was presented: Household Arts in the Elementary Schools, Grace Schermerhorn, Director of Cooking, New York Public Schools; Survey of Committee of 21, George A. Works, Professor of Rural Education, Cornell University; Nutrition in the Grade Schools, Mary G. McCormick, Supervisor of Nutrition for School Children, State Department of Education; The Class Project, Mrs. Josephine Cross, Teacher of Homemaking,—discussion led by Treva E. Kauffman, Supervisor of Home Economics, State Department of Education; Problems of the Home, Martha Van Rensselaer; and a discussion of the Problems of the Larger Household led by Emma H. Gunther, Teachers College, Columbia University, assisted by representatives of eight different lines of institutional management located in and near Buffalo.

An unusually well-arranged exhibit of home economics schoolwork in clothing, with special emphasis given to its bearing upon health, was on display in the Hutchinson High School.

Grace P. Gillett, New York State College for Teachers, is the newly elected president; Edith M. Barber continues as vice-president, and Edith Sarver, Supervisor of Home Economics, Schenectady, as secretary and treasurer.

The New York City Home Economics Association held its December meeting on Tuesday January sixth, with the subject for discussion, Home Economics Problems in Social Work. The meeting was led by Mrs. Amy Drinkwater Storer, Director Nutrition Service, Atlantic Division, American Red Cross. Short talks were given by social workers from the city Red Cross, which has established a teaching center where free instruction is given in special diets; from the Hebrew Charities Association, which is working with mothers and undernourished children; from the Association for Improving the Condition of the Poor, which deals with problems of nutrition through its budget work; and from hospitals and other welfare organizations. The meeting showed the work which is being done along the lines of nutrition, and the efforts which are being made by all welfare organizations to cooperate in the solution of the malnutrition problem.

Teachers College. The School of Practical Arts is conducting, during January, February, and March, two new series of popular lecture-demonstrations in cookery for homemakers. The lecturers are Bertha E. Shapleigh, Anna Barrows, Mary I. Barber. The first series will deal with new methods of utilization and garnishing of everyday foods. The second series will deal with the preparation of simple and attractive meals, especially luncheons and Sunday night suppers.

The Meat Council of New York was formed some months ago for the general purpose of bettering the service of the meat industry. It handles complaints and dispenses information relating to the retail meat business and the meat industry in general. The Meat Council's membership contains delegates representing the retail meat dealers of Greater New York, representatives of the wholesalers, and representation from the Bureau of Markets, U. S. Department of Agriculture.

NORTH DAKOTA

The Home Economics Section of the North Dakota State Teachers Association

met in session with the State Teachers Association at Fargo, November 21 to 23. The entire group of home economics teachers was most enthusiastic over the prospects of a state organization and voted unanimously to take one session for the purpose of organizing. Mrs. Myrtle Cole was elected president, Marie Stevenson, vice-president, Christine Finlayson, secretary, and Fern Fillingham, treasurer. For the present, four sections seemed to cover the need of the state organization. Alba Bales was made chairman of the Teachers' Section; Mrs. Mabel Hollis, chairman of the Homemakers' Section; Miss Swope, chairman of the Institutional Section; and Grace DeLong, chairman of Extension Section.

Over sixty-five persons registered and expressed their intention of becoming members. Since that time the association has affiliated with the American Home Economics Association, with thirty-seven paid members. From present indications, there will be a very enthusiastic and active State organization in North Dakota.

OHIO

A New Practice House at Ohio State University was opened, December first, for the use of the department in providing training for students who are preparing to be vocational home economics teachers. This enterprise is being financed by vocational funds. Six students and a member of the home economics faculty are now living there. The student group will change each six weeks. The practice apartment which has for some time been maintained in the home economics building will continue to be used also, so that an exceptionally good opportunity for home management experience is provided.

The Household Arts Department of the Woman's Club of Oxford, under the guidance of Alice Swisher of Miami University, is making a study of food under the following topics: (a) significance of food, (b) malnutrition of children, (c) school lunches, (d) food for children, (e) food for adults, (f) dietaries, (g) food for the sick and convalescent.

The Cleveland Home Economics Association held its first meeting of the year Monday, November 4, at Hayden Hall, College for Women, W. R. U. Mary E. Parker, president, presided. Dr. G. W. Crile of national reputation, spoke on "Exhaustion and Restoration with Special Reference to the Problem of Nutrition," illustrating his talk with lantern slides. Before the lecture, tea was served by the sophomore class of the college.

Diet Lectures. Dr. E. V. McCollum of Johns Hopkins University gave three lectures in Cleveland, November 30, under the auspices of the Cuyahoga County Public Health Association and interested civic associations. The lecture on Scientific Diet given in the afternoon at the Florence Harkness Memorial Chapel, W. R. U., was designed especially for those trained technically along food lines, and was in charge of the Cleveland Home Economics Association.

An Exhibition of Articles Suitable for Christmas Problems was held by these sewing teachers of the Cleveland public schools, the week of November 16-23, at the Board of Education Building. This exhibition was planned as a clearing-house of ideas for teachers, and articles entered were such as would require only one or two lesson periods in the making. Nothing was accepted that was not of real value when completed, and each article was accompanied by all necessary directions for its construction. This exhibit, the second of its kind to be held here, was found to be exceptionally helpful.

SOUTH DAKOTA

The Home Economics Section of the South Dakota Education Association met in Huron, November 21 to 23, 1921, with the president, Fannie Sims of the University of South Dakota, presiding. The members of the association voted to affiliate with the American Home Economics Association and to make the necessary changes in their dues and constitution. The officers elected for the coming year are: President, Edith Pearson, State College, Brookings; vice President, Clara Flemington, City Schools, Aberdeen; secretary and treasurer, Catherine McKay, City Schools, Huron.

Some of the papers on the program were: Standardization of Home Economics Courses in South Dakota, Edna Courtney, State Supervisor of H. E.; Comparative Value of Texts for High School Use in Teaching Foods and Clothing, S. Patti Jones, Elkton; Home Projects, Helen Johnston, Bryant; Studies, of the Malnutrition of School Children, Ruth Dougherty, Watertown; Educational Tests as Applied to Home Economics, Ruetta Day, State University, Vermilion.

The Round Table discussion included popularizing home economics, plans for projects, cost of operating departments, and teaching the budget system.

UTAH

The Utah Educational Association held its 1921 meeting, October 20-22, in Salt Lake City. The morning and afternoon sessions of October 21 were devoted to the various section meetings. The Home Economics Section claimed by far the largest number of home economics teachers who have ever come together at any meeting of this Section, the attendance numbering 165 in the morning and 140 in the afternoon. Several special guests, friends of home economics, gave an element of added interest to the meetings. Those who joined in the noon luncheon in Hotel Utah found the good-fellowship, thus promoted, a means of sustaining the lively interest which attended the morning meeting, and of carrying it over to the afternoon program. The officers in charge of these sessions deserve praise for the pronounced success of the meetings.

The excellence of the program is suggested by the titles. Each subject was allowed twenty minutes for presentation and was followed by a ten to twenty minute general discussion under direction of a leader, as follows: Points of Emphasis in Methods and Course of Study at Teachers' College, Effie Warnick, Pleasant Grove High School; The Peak of Interest in the Last A. H. E. A. Convention, Jessie Whitacre, Utah Agricultural College; Methods of Correlating Art with Domestic Art, Mary Bastow, Brigham Young College; The Thought of the Child, Rose Jones, University of Utah; High Lights for Home Nursing, Sadie Tooth, School Nurse, Manti, Utah; What

We May Expect from Our Higher Institutions in Experimental Research, Blanche Cooper, Department of Human Nutrition, Experiment Station, Utah Agricultural College.

The action which immediately preceded adjournment was particularly appropriate and gratifying. The meeting voted unanimously to adopt the new plan for affiliation with the A. H. E. A., and has since completed affiliation with forty-five paid up members.

WASHINGTON

High School Dress Reform. After several weeks of discussion, Dress Reform was instituted in the high school of Walla Walla, Washington, by the girls themselves. Each of the fifteen organizations in which girls are represented met and determined upon the type of reform and the means of enforcement. From the reports of these groups a committee of representative girls formulated the permanent Dress Regulations, which were voted upon in the Girls' Assembly and passed by an overwhelming majority. Simplicity, modesty, good taste, and non-extravagance were emphasized throughout the reform. The regulations have barred velvets, georgette crepe, silk (except in simple waists), very thin materials, scant camisoles, extremely short or extremely tight shirts, silk hose, French heels, rolled-down hose, fancy garters, excessive cosmetics, and extravagant hair-dress.

Of equal importance with the regulations has been the method of enforcement. This is delegated to a Girls' Council composed of nine representative girls and a president chosen from the girls at large. Each week this organization meets with the Dean of Girls, and hears and sentences all girls who have refused to conform to the regulations. Offenders are reported by the girls themselves, every girl in the high school having this privilege. On the third appearance before the Council the parents or guardian of the girl must be notified, and on the fourth, the Council may recommend suspension for the culprit.

Although the reform has been operative only since March 5, 1921, the results have been more than satisfactory. The girls and

their parents have given their enthusiastic support. One organization of mothers secured the coöperation of the local stores and presented a very successful Style Show to express its appreciation. The girls have succeeded in making simple and modest dressing popular and feel justly proud of what they have accomplished.—Ethel L. O'Connor, *Dean of Girls High School.*

NOTES

Omicron Nu at the University of Kansas recently conducted a very successful campaign among the students in the Department of Home Economics, and sent in thirty subscriptions to the JOURNAL OF HOME ECONOMICS.

Lulu Graves, formerly Professor of Home Economics at Cornell University, has joined the staff of Mount Sinai Hospital as Supervisor of Dietary Work of the private patients and children's departments. Miss Graves will also organize at Mount Sinai classes in nutritional work for nurses.

FOREIGN

Domestic Labour-Saving Competition. American women are urged to enter a competition opened by the Woman's Engineering Society, London, in order to stimulate interest in the invention and improvement of devices for saving labour in the home.

The competition is divided into three sections: *a.* engineering devices suitable for mechanical, electrical, and automobile work; *b.* structural improvements; *c.* any other labour-saving appliance for the home. Competitors may enter for each section, but no competitor shall be eligible to receive more than one prize. An entrance fee of 2/6 will be charged for each entry in each section. Only working models or working drawings will be accepted, size of drawings not to exceed 30 by 22 inches, and the length, height, and width of models added together not to exceed 60 inches. The following prizes will be awarded: section *a*, seven guineas; section *b*, five guineas; section *c*, three guineas.

All models and drawings must reach the offices of the Women's Engineering Society, 26 George Street, Hanover Square, London, W 1, on or before March 31, 1922.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE REFORM OF GIRLS' SCHOOLS IN AUSTRIA

MARIA MARESCH

Austrian Ministry of Education

For a long time the teaching of girls was the subject of discussion between two groups: one believing that girls should be trained in schools for earning their living like boys, the other that girls should be prepared only for their domestic vocation of wife and mother. The former advocated the identity of girls' and boys' schools; the latter favored girls' schools teaching home economics, history, and languages, but not mathematics and natural science, as in the Austrian system and the higher schools for girls in Germany.

Economic need, however, compelled the two groups to agree on one form of girls' school, whose aim is to prepare the girls, not only for earning a living or for their vocation as wife, mother, and housekeeper, but for both duties. No girl knows her future, and many, in addition to fulfilling the duties of wife and mother, are compelled to earn their bread and the bread of their children. The income of a man of middle class in Austria is never large enough to provide adequate nourishment for a whole family, and most girls marry now with the intention of being both worker and wife. They must be prepared for both. The few girls who will not be obliged to fulfill both duties need instruction in economics of the household, for the immense increase in prices exacts the most careful and rational use of all materials in kitchen and house. The lack of such knowledge is often the first cause of social decline, and the social decline of one person affects all people. Economic instruction is no longer a matter of individual decision; today the state must provide every girl a measure of training during the period of compulsory schooling, that is, from the seventh to the fourteenth years.

The Ministry of Public Instruction has introduced the teaching of home economics in the last class of all primary schools. In 35 half days of cookery the girls of fourteen years learn the most important methods of conservation and buying for the house, and the use of milk, eggs, fat, flour, meat, rice, potatoes, legumes, green vegetables. They are taught the composition of foods, the nutritive value, the price, and quality. In a two hour period each week the girls become familiar with materials such as clothing and furnishings, as well as with the principles of sanitation, physiology, and child hygiene. The teaching of home economics must give more than the knowledge of the operation of the house; it must show young people that cookery, sewing, and the whole technique of daily life are necessary steps in expressing the highest social instincts. It has the same importance, whether the old familiar household is to remain or the common household, of which socialists dream, is to come. That training must prepare the girls to use the results of modern progress in the home to save human energy and time and to permit them to attain other cultural ends.

These views caused the reform of the higher girls' schools also. Besides the *gymnasium* which is the same for girls and boys, there arose a new type of higher school for girls, the *Frauenschule*. The type is new, although the name has been used previously in Germany. But in Germany, *Frauenschule* is a course of only practical instruction which girls enter after the lyceum. The Austrian *Frauenschule* receives pupils in the 14th year and they remain till the 18th. Required subjects are the same ones taught in other schools of the same grade, but the method of teaching is different. Teaching in cookery, sewing, and nursing is in connection with natural science, mathematics, and all other required subjects, not in addition to them. The girls, instructed in the *Frauenschule* will be pioneers of the housekeeping of the future. Spirit and soul will dominate all technical knowledge when woman conceives the importance of her social mission, which is to strengthen and improve society by choosing wisely materials necessary for its upbuilding. Thus inanimate things will be made to react to the development of humanity.

LAUNDERING*

LYDIA JACOBSON

Textile Chemistry Laboratories, Iowa State College

Laundering involves a knowledge of the chemistry of textile fibers, water, detergents, soaps, starches, bleaching agents, bluing, and dyes, as well as some knowledge of machinery and skill in managing manipulative processes. It is a subject which has received considerable scientific investigation because of both its practical and theoretical interest. The purpose of this article is to summarize results of recent investigations.

Laundering as a part of the manufacturing process has been for many years the subject of extensive research and experimentation, but not until recently has it been studied from the launderer's point of view. For the past five years the Laundry Owners National Association have maintained a fellowship at Mellon Institute of Industrial Research, University of Pittsburgh, for the purpose of improving the industry through the application of science. As a result, three charts on standard wash room practices and one on the removal of stains have been prepared by H. G. Elledge, besides a book, written in coöperation with Alice Lucile Wakefield, on "The Conservation of Textiles."¹ It contains many photomicrographs and illustrations showing that the damage suffered by fabrics in the process of being laundered is often due to the original condition of the fiber and the weave of the fabric. They emphasize the fact that the manufacturer, user, and launderer are all responsible for the length of life of a fabric.

However, a successful laundering process also depends upon a wise choice of reagents, especially of detergent and bluing, and both of these have been studied extensively.

Soaps. A résumé of recent experimental work, together with an explanation of the new conception of the nature of soap solution, will be found in the "Third Report on Colloid Chemistry and Its General and Industrial Applications," published by British Association for Advancement of Science. McBain, Professor of Physical Chemistry, University of Bristol, and his co-workers have established by authentic experiments that soap solutions belong to a class of colloidal electrolytes defined as

* This is the first of a series of articles dealing with recent advances in textiles and textile chemistry.

¹ Published by the Laundry Owners National Association, La Salle, Ill.

"salts in which one of the ions has been replaced by a heavily charged, heavily hydrated, ionic micelle which exhibits equivalent conductivity that is not only comparable with that of a true ion but may even amount to several times that of the simple ion from which it has been derived. In other words, this ionic micelle is a typical, very highly charged colloidal particle of great conductivity." This theory explains the seeming inconsistency exhibited by a soap solution of high conductivity in spite of low osmotic effects, and accounts for other peculiarities such as uncommonly low density and remarkable detergent action. In the light of this new conception and after a thorough survey of the literature on the subject, McBain summarizes the following factors as being important in the detergent action of soap:

1. Necessity of having soap in solution. Kraft² proved experimentally that the detergent action of a soap varies with its solubility and showed that stearates and palmitates being insoluble in cold water are less effective than oleates which are soluble in cold water. Jackson³ showed also that the colloidal nature of oleates persists well into dilute solutions and therefore are the most effective soaps to use on materials which would be injured by high temperature of concentrated solution.

2. Power of emulsification which goes parallel with low surface tension and formation of surface films.

3. Wetting power, which makes it possible for a soap solution to creep between and dislodge particles of oily dirt so that they can be flushed away. Emulsifying and wetting power were attributed by early writers to hydrolysis of the soap, but Hillyer⁴ proved experimentally that emulsifying properties of soap could not be attributed to hydrolysis and that alkali does not wet oily matter as soap does. Hence both must be due to undecomposed soap.

4. The action of soap in forming non-adhesive colloidal sorption compounds with tissues and impurities which are capable of remaining in stable suspension. Spring⁵ attributed the detergent action of soaps to a combination of acid soap (derived from hydrolysis) with dirt particles to form sorption compounds which could not adhere to the fabric. This may be indicated by the following reaction: dirt-fabric + soap = dirt-acid soap + clean fabric. McBain suggests, however, that a more logical alternative would be to consider it a double decomposition re-

² *Ber.* 1894, 27: 1747-1755; 1895, 28: 2566; 1896, 29: 1328; 1899, 32: 1584.

³ Cantor Lectures.

⁴ *J. Am. Chem. Soc.*, 1903, 25: 511-524-1256.

⁵ *Bull. Acad. Roy. Belg.*, 1909, p. 187-949.

action in which two sorption compounds are formed—fabric soap and dirt soap; and furthermore that the sorption compound is due to soap itself rather than acid soap. Pickering⁶ agrees with Spring that such acid-dirt sorption compounds could be formed but points out the fact that preventing hydrolysis does not decrease detergent action.

5. Colloidal condition of soap. This has been conclusively demonstrated by Hillyer and Spring who proved that detergent action is influenced by the chemical composition of soap only so far as this affects their behavior as colloids.

Rosser⁷ has recently investigated the subject of soaps with reference to soap saving. He concludes that different soaps show the following order in cleansing power: tallow soaps, soaps from liquid vegetable oils or olein, coconut and palm-kernal oil soaps, and rosin soap. The greatest cleansing efficiency is obtained with 0.2 to 0.4 per cent soap solutions.

The need of some standard method of determining the cleansing effect of soaps and other washing compounds has been quite apparent. Heerman⁸ describes a laboratory method in which all factors are controlled and results are comparable.

The launderer, though not directly concerned with the manufacture of soap, is nevertheless as much interested in obtaining soaps which combine economy and efficiency as the manufacturer. The scarcity of fat available for soap making has elicited considerable experimentation and study of possible substitutes, especially in Germany. G. Weissenberger⁹ found it possible to substitute a clay from Gaura, Siebenburg, for part of the fat and obtain a detergent which proved useful in a practical washing test. Fenton¹⁰ also produced a soap made with as high as 50 per cent clay. The claims¹¹ made for colloidal clay soaps prepared by incorporating the clay directly with the oil or fat and caustic during saponification are: (1) It is more soluble in water and lathers more quickly. (2) It is ready for use sooner after manufacture and does not become too dry by long keeping. (3) It is less likely to contain free alkali owing to the absorptive power of colloidal clay. (4) It improves in quality on aging.

⁶ *J. Chem. Soc.*, III, p. 86.

⁷ *Seifensieder Ztg.*, 1921, 48: 268-9, 290-1, 309-10, 355-7.

⁸ *Berlin Ztg., Deut. Oel-Fett-Ind.*, 1921, 41: 338-41.

⁹ *Kolloid Ztg.*, 1920, 27: 69-78.

¹⁰ *Se. Am.*, 1920, 123: 183, Ag. 21.

¹¹ Colloidal Clay and Hydrolysis of Fats and Oils. *Chem. Age* (London), 1921, 4: 604-5, 638-41.

Cereal soaps¹² have been made by hydrolyzing a cereal flour and saponifying with alkali. Dried or liquid cheese, whey, milk, skim milk, or buttermilk can be added to the extent of 5-20 per cent.

The hydrocarbons have been considered as another possible substitute for fat. By oxidizing the hydrocarbons, especially paraffine, to higher fatty acids, they will combine with an alkali to form soap. The process has been tried on a commercial scale in Germany.¹³

Sulfuroil,¹⁴ which is a product obtained from the manufacture of olive oil by extracting the press cake with carbon bisulfide, may be utilized for soap making and if mixed with other fats produces a hard soap suitable for household use.

Schrauth¹⁵ has patented a process for making a soap from hydrogenated phenols. The soap so produced, being soluble in benzine is especially suitable for dry cleaning. New methods of making soap antiseptic have been patented in both Germany and the United States. Croner¹⁶ succeeded in making a soft potassium soap from a mixture of fatty and hydroxy fatty acids in such proportions that the potassium hydroxy fatty acid soap dissolves in the formaldehyde added and is claimed to possess great disinfecting power. A United States patent¹⁷ covers a process by which sufficient chlorine gas is occluded in soap to give it both antiseptic and bleaching properties.

Aside from the investigation of Keit¹⁸ which established the fact that rosin soap and washing compounds containing trichlorethylene produce a yellow tint in fabrics, no comparative studies have been made to determine which soaps combine the greatest number of advantages. The average laundress has no way of determining the value of the soap she buys except by the trial and error method, and consequently cannot easily detect dishonest advertising; but mills, laundries, and others using large quantities of soap can require that the soap purchased conform to certain specifications. The most recent report on the subject of soap analysis will be found in the *Journal of Industrial and Engineering Chemistry*, August, 1919.

¹² U. S. Patent 1,360,252, Nov. 30, 1921.

¹³ *Chem. Ztg.*, 1921, 45: 177-8.

¹⁴ *Seifensieder Ztg.*, 1920, 47: 711-2.

¹⁵ *Berlin Ztg. Deut. Oel-Fett-Ind.*, 1921, 41: 129-32.

¹⁶ *Seifensieder Ztg.*, 1921, 48: 3-4.

¹⁷ *Patent-Chem. Ab.*, Vol. 15, p. 1827.

¹⁸ *Seifensieder Ztg.*, 1921, 48: 41-2.

Bluings.—H. Mayer¹⁹ has investigated the four types of ultramarine bluing and gives three tests for determining quality.

1. Purity of shade—By spreading powdered ultramarine on white paper a mixture of colors would be quite noticeable.

2. Coloring capacity—By mixing equal weights of samples to be tested with five times its weight of plaster of Paris a difference in intensity of color may easily be detected.

3. Fineness—By shaking a quantity in water and noting the time required for complete subsidence, the fineness may be determined.

The presence of foreign material is determined as follows: (1) Starch may be detected by boiling in water. (2) Dextrine is recognized by the odor. (3) By adding hydrochloric acid to the solution a greenish blue color shows indigo carmine to be present, while the absence of color indicates prussian blue. Several tests for aniline dyes are given. Wash blue, China blue, and indigotin are recommended as being suitable for laundry purposes.

Laundrying as now done in most homes and in many laundries must be an art; it is not a science. Most of the suggestions for its improvement have come from popular literature where errors have been multiplied many times. However, with the present increasing amount of experimentation on this and related subjects, it should ultimately be as well taught and as scientifically done as any other household task.

¹⁹ *Seifensieder Ztg.*, 1921, 48: 89-111-2, 129-30, 151-2.

SOCIAL AGENCIES IN THE COAL FIELDS OF
WEST VIRGINIA¹

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At first glance any one who knows West Virginia would say, "How can one speak with authority for the women of the mining regions of the entire state?" Since the mountains which divide one section of the state from another are so high, and the roads over many of them are bridle paths or still more impassable, it is almost impossible to know what is progressing in each little mining village. If some good work has been omitted, this is the excuse. West Virginia has voted a bond issue not to exceed \$50,000,000 to build good roads, and this construction is going on at present.

As one travels about the state the change that has come over it in the last thirty years cannot but prove startling. At that time West Virginia made small promise, to the casual observer, of the competition she was to give the older coal fields. Thirty years ago the primary occupations in West Virginia were rural ones—farming, sheep and cattle raising. Lumber was an important product but many heavily timbered lands had no railroad outlets. The northern end of the state was enjoying an oil and gas boom. Huntington was a town of ten thousand population; Charleston was not much larger; Beckley had 158 inhabitants; Williamson, Welch, St. Albans, and Bluefield were small rural villages. In the last thirty years Raleigh County has quadrupled its population; McDowell County has nine times as many people, while many counties have doubled their population. In the rural homes of many communities were largely produced all necessary goods, such as clothing, soap, foods, except flour, salt, sugar, and condiments. The people raised their own wheat, and traded one commodity for another. As far back as 1910, 97 per cent of the inhabitants were native born.

But a change has swept over the state. From living in sparsely located rural sections, the people have swarmed into closely settled mining villages. The conditions of life are entirely different, and one who has lived two miles from a neighbor cannot readily adjust himself to living

¹ This paper deals chiefly with the work among women and girls. The writer spent the summer of 1921 in traveling through the mining sections of the state, and has worked for three years in the coal fields as County Home Demonstration Agent of Logan County, as Welfare Director of the Logan Mining Company, and in State Extension Work.

within sixty feet of one. The density of population changed from 31 persons per square mile in 1900 to 50 per square mile in 1910. Here we have gathered together, in an almost continuous mining village, thousands of rural-thinking people who face, not only a new line of work, but a new way of living. The women who formerly produced as well as preserved and prepared the bulk of the food, now buy food which needs preparation only. They who formerly milked the cows and worked the garden now prepare two meals a day and keep a four- or six-room house clean. Any social program for the women of the mining sections which does not take this into account will be a failure. Woman as well as man must work to be happy.

Social work has been carried on in the coal fields by seven different agencies: the Young Women's Christian Association, the Young Men's Christian Association, the Red Cross, the State Health Department, the public schools, religious organizations, and the coal operators who desired to better conditions in their camps.

The Young Women's Christian Association has had workers in mining town work only at Fayette in Raleigh County. Fayette County now has four workers and hopes to have six. It is difficult to find the right workers. The Y. W. C. A. workers use the extension projects and do intensive community work.²

The Young Men's Christian Association works with the Island Creek Coal Company at Holden, Monaville, Mallory, and other points. A large Y. M. C. A. House is built usually containing a moving picture show, barber shop, pool room, bowling alley, soda fountain, reading room, and lodge hall. A secretary is placed in charge and the building is made a community center. Here the women hold Ladies Aid and Red Cross meetings, festivals, and dances.

The Winding Gulf Colliery Company, Winding Gulf, does the welfare work through the public school, as do the United States Steel Company of Gary, the Lundale Fuel Company, the E. E. White Coal Company, and the W. F. Tams Company. In some instances the school principal is hired for twelve months. He then has charge of boy scouts or other boys' clubs. Each teacher receives \$250 to \$300 bonus for engaging in some outside activity. The Logan Mining Company, Logan, W. Va., has two workers, a social visitor and a nurse.³ At present they

² By writing to the Industrial Secretary of the Y. W. C. A., 600 Lexington Ave., New York City, one may obtain full aims of the work done by this organization.

³ See "Welfare Work in a Mining Town," *Jour. Home Econ.*, January, 1919.

have no classes in cooking or sewing for the girls. The Aracoma Coal Company and the Thurmond and Argyle Coal Company of Logan County, the Leckie Coal Company, and the Pocahontas Fuel Company employ nurses. The nurses serve in most cases a purely medical function; in others, they are social visitors and see that the company property is not abused.

The social religious worker is not so numerous yet as the nurse. We find one at Whitman Creek in Logan County, another at Mallory, another at Gilbert. Their salaries are paid by the churches. The Presbyterian Church has twenty-five social religious workers in the mountains and mining towns. Their work is principally Christian instruction. They conduct Sunday schools and Bible classes and make home visits. During these home visits they discuss sanitation, cooking, and clothing problems with the mothers. These workers come from the training school at Richmond, Virginia, but are not trained along home economics lines. Dr. Mauze, pastor of the Presbyterian Church, Huntington, feels that they should have two years of home economics training. A woman trained to help solve home problems and needs can gain the confidence of the people.

Mr. Winthrop Lane Allen says, in "The Truth about the Civil War in West Virginia," that the people have everything done for them; they are not taking part in the work themselves. This criticism is just, but Mr. Allen neglects to give full credit to the workers who so willingly do for others. On the other hand, we must not stunt the social growth of the one we do for. Each person needs an opportunity to work creatively and it seems to me that the program of the State Extension Department will give that opportunity. When we teach the women of the mining towns to provide the winter's supply of food, to make her family's clothing, to budget her husband's income, to nurse her children when sick, to meet the sanitary problems, she will have her work, her share of responsibility. Then in part, perhaps small part, shall we solve the unrest in the mining village.

BASAL METABOLISM OF WOMEN AND UNDERWEIGHT CHILDREN¹

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The past few years have seen much increase in interest in the study of basal metabolism, that is, the observation of the calories produced by the body when lying perfectly quiet and without food. This basal metabolism is a measure of the minimum rate at which an individual may live while awake. The rate while asleep is really somewhat lower but because of the many and obvious difficulties of working with sleeping subjects, the custom is firmly established of considering the observation on waking subjects as basal.

Interest in the subject has been stimulated partly by the publication of many hundreds of observations on normal subjects of all ages by Benedict and others, partly by the increasing realization of the diagnostic value of basal metabolism determination in thyroid disease, and partly by the development of the comparatively simple portable apparatus by Benedict. This apparatus, costing only \$250, and fairly easily used, has made the study of basal metabolism possible for home economics departments and has given us both a means for research and an opportunity for vitalizing our usual teaching of metabolism.

The essential feature of the apparatus, fully described elsewhere by Benedict, is a closed volume of oxygen-rich air kept in circulation by a blower. The resting and fasting subject breathes into this through a mouthpiece, the nostrils being closed by a nose-clip, and the carbon dioxide exhaled is removed by passing through soda lime. The diminution of the volume of air in the apparatus is easily read on the scale and represents the oxygen consumed by the subject in the given time. The oxygen volume can be converted to calories by multiplying by the proper factor—4.82 per liter. The usual observation period is 10 minutes, duplicates of course always being taken. The total amount of time consumed by the subject with the half hour rest period and two 10-minute observation periods is less than an hour, and the experiment involves not the slightest discomfort unless waiting for breakfast be so considered.

¹ Presented at the Fourteenth Annual Meeting of the American Home Economics Association, Swampscott, June, 1921.

The Home Economics Department of the University of Chicago has been so fortunate as to have had one of these apparatus since November, 1920. This paper summarizes some of the observations that have been made with it.

A woman's laboratory gives, of course, especial opportunity for observation on women. Heretofore, a good many single observations have been made on women; Benedict, notably, has reported on the basal metabolism of 103 women, and formulated his standards of metabolism for women therefrom. Until recently, however, almost no work has been published on the effect of menstruation on metabolism. Is the periodicity of the menstrual cycle in any way reflected in a periodic variation in basal metabolism? Marie Dye,² one of our fellows, has made series of observations on 14 women, most of them during 2, or in some cases 3, menstrual periods, with intermenstrual observations as well, and has found no indication at all of a periodic rhythm in metabolism. She found considerable day-by-day variation, with unexpectedly large, and so far inexplicable, ups and downs, but no regularity and no more variation during menstrual periods than at any other time. Her subjects were all women students or faculty members ranging in age from 21 to 44 years, were all in fairly good health, doing their laboratory work regularly. Four of the subjects were so fortunate as to be able to say that they felt absolutely no discomfort of any kind during menstruation; the others experienced more or less fatigue or languor. In other words, the group may fairly be taken as typical of normal women. There may be a periodic rhythm in other body measurements corresponding to the menstrual cycle; body temperature, for example, seems to give indication of such variation. But basal metabolism, and pulse rate which we observed at the same time, do not show periodicity.

We were surprised at first to find our marked day-by-day variation. We had been strongly impressed with the idea that an individual's basal metabolism, at least in health, was constant. If we made many observations on any one subject, however, we were sure to get considerable range for that individual. In one case, for instance, when we made 29 observations scattered over 6 months, the range was from 1080 to 1315 calories per day, a difference of 22 per cent. In most cases our range was not nearly so great, but still it was surprising. We do not consider that it was due to faulty technique, for we constantly tested our apparatus, checked our results, and required close duplicates. Bene-

² Blunt and Dye: Basal Metabolism of Normal Women, *Jour. Biol. Chem.*, 1921, 47: 69.

dict, also, several years ago, commented on a similar range in some of his own observations. The point shows the necessity of taking at least two days' observations before reporting definitely on basal metabolism for clinical and other purposes.

Another problem which we have investigated is that of the basal metabolism of some of the underweight women students at the University. Benedict, in 1917, found greatly lowered metabolism in a group of young men students who had lived for several months on a very much lowered food intake, about two-thirds of their normal calories. We were interested to learn whether the young woman student, who was 11 per cent or more under the normal weight for her height but who was eating supposedly enough to satisfy her normal appetite, would show the same low metabolism, that is, would be found to be living on a distinctly lower nutritional plane than normal. Another graduate student in the department, Virginia Bauer,³ undertook the observation of 20 such young women and found them all to have basal metabolism close to that predicted for them. They did not therefore present the abnormality shown by Benedict's young men who had deliberately cut down their food. Their underweight, serious though it doubtless was for their general health and vigor and their power of resistance to disease, did not effect their metabolism.

Quite different were our results with underweight children.⁴ Here we have found abnormality and in the direction of increase. We have observed two groups of underweight children and most of each group had a basal metabolism higher than is to be expected for their weight and age.

Our first group consisted of 13 distinctly undernourished children and one fairly normal boy, all from the Child Health School held at the University last summer under the auspices of the Home Economics Department with Lydia Roberts as director. Of course the chief problem with the children was to keep them lying perfectly quiet, first for the half hour rest period, and especially during the two 10 minute observations, a very long time for 9 to 12 year old children. Alta Nelson, who did the work, succeeded in this because of her own very friendly relation with the children, the many "tests" in the school, and the system of rewards instituted for successful accomplishment of the experiments, chief among

³ Bauer and Blunt: A Study of the Basal Metabolism and Food Consumption of Underweight College Women. To be published in the JOURNAL.

⁴ Blunt, Nelson, and Oleson: The Basal Metabolism of Underweight Children. *Jour. Biol. Chem.*, 1921, 49: 247.

which was membership in the "basal metabolism club" of the school—so called by the children. As a help during the observation periods a fellow student read stories aloud to the children. The observer herself kept careful record of the slightest motion in her young subjects and counted as a success only those determinations during which they were really quiet and in which her duplicates agreed closely. Some children she observed successfully early in the 10 weeks of the school and several times afterwards; one nervous little boy she succeeded with only after the rest periods in the school had trained him in lying quiet.

For the standard to compare with our figures we used the series of curves published by Benedict and Talbot in their recent monograph, "Metabolism and Growth from Birth to Puberty."⁵ These investigators give charts with a dot for the basal metabolism at different weights or ages of every one of the many children observed, and then draw smoothed curves representing a fair average of these single dots. Every one of our 13 underweight Health School children showed basal metabolism distinctly above Benedict's curve, in many cases above his highest single dot, and the one normal boy was approximately on the curve. That is, these thin, nervous, "jumpy" children, with their tendency to undereat because of fatigue and poor appetite, really have a basal food need higher than the normal child.

It will be of interest to give some of the figures for Elsie S., a little girl of 10 who, though not the most underweight of the group (only 13 per cent), is the child showing the excess metabolism most markedly. Incidentally it should be stated that the physician who examined her found no thyroid disease. She produced heat at the rate of 1188 calories per 24 hours, while Benedict's and Talbot's average child of the same weight produced 860 calories or 39 per cent less. Every kilo of her weight was thus living a rate more than one-third higher than that of the average child.

Our second group of underweight children was from the University Elementary School. We are not yet ready to report on them in detail, but can say that in general the observations confirm those made in the Health School—that the basal metabolism of underweight children tends to be abnormally high.

This line of work on the metabolism of women and children, normal or otherwise, has thus great possibilities and it is one which we hope to continue.

⁵ Benedict and Talbot: *Metabolism and Growth from Birth to Puberty*. Carnegie Institution of Washington, Publication No. 302, 1921.

ADMINISTRATION PROBLEMS¹

AGNES GLEASON

Manager Parkway Tea Room, Chicago

Administration is the subject given me to discuss, and I have looked it up in the dictionary, to be sure that I knew its meaning. I find it comes from the Latin "administratio," meaning the "care of affairs" and that a synonym is "the conduct of a business." But, back of "administratio" is another word, its root, which gives the real sense of the first—"minister," the word for "serve." I like to keep in mind the deeper meaning of "administration," which is "service."

Perhaps the most helpful way to discuss the management of a tea room is to imagine one's self answering the questions asked by one who is thinking of establishing such a business. College women frequently come to me as pioneer in the tea room business to ask how to establish a business of their own. They are well equipped with education in home economics which our colleges and technical institutes are so wisely giving. Tea room management looks easy. People always tell them there is money in food. The following are some of the points I would have the aspirant consider.

1. Do you like food, that is, the ordering, or the preparation of it to please the eye and nourish the body? If you do, that is a good foundation.

2. Have you had any experience in preparing food?

3. The question is usually asked: "How much capital is required, to begin on a moderate scale?" I answer: "There is no such thing as a moderate scale today." The word "moderate" will soon have to be eliminated from our dictionaries, for it has no equivalent. The amount of capital needed depends on your choice of location. Rents differ widely in different places. One-third of the amount you have at your disposal should be kept in bank. A rainy week, when receipts fall off, will spell much worry if there is no reserve fund.

4. Location is important, especially in the beginning. Mr. Childs of the famous chain of restaurants says, in the November *American Magazine*, that location is the biggest factor in the success of a popular-priced restaurant, with physical equipment second and management

¹ Abstract of a paper presented at the Annual Meeting of the American Dietetic Association, Chicago, October, 1921. The Journal published an article by Miss Gleason on a similar subject, April, 1920.

third. He is speaking, of course, from a standpoint somewhat different from ours. I should be inclined to put management first.

5. An interior decorator will be helpful, especially to the beginner. I have in mind a resort tea room, conducted for the benefit of a college fund, which owed much of its popularity to a clever decorator, who transformed an ugly cottage into a chic little tea room. But remember, no matter how attractive the dining room is, your patrons come to you primarily for food, and their returning depends on how well you satisfy them in this respect.

6. As to equipment, my advice would be, "buy cautiously." If you visit a store devoted to equipment of restaurants, you will be told that you must have this or that; but wait and see for yourself. Buy only essentials, and these of the best.

7. Perhaps one of the greatest assets in this business is an open mind and a willingness to learn.

Having talked thus far, the young woman who is anxious to start a tea room often says: "I believe I could do it, if only I could learn about the buying of food." My reply to this is that, while it is important to purchase properly, it is still more important to merchandise food successfully, after it is purchased. It is well always to buy the best, but the great art is to sell to the best advantage.

The kitchen is, of course, the heart of the establishment, and success must emanate from that point. The ideal kitchen is sunny and well ventilated. In my establishment, I have to find a way to live up to the requirement of the ten-hour law, effective in all restaurants. I have a group of women who come on duty at five o'clock in the afternoon, replacing three others whose time expires at that hour. These fresh workers go on with the dish-washing and later clean the kitchen and dining-room, which are thoroughly scrubbed every night, making them spotless for the workers to enter next morning. I find there is a desirable psychological effect if those who work in the kitchen can come into a clean, sweet-smelling place in the morning. I prefer women, for waiting on table, as it promotes the home atmosphere, but I have had both men and women for superintending the work, and have been equally satisfied with both. At present, I have a man for head waiter.

We have said that the kitchen is the heart of the place, but its efficiency would be much impaired without a well ordered dining room where food is appetizingly served. A maxim often repeated in our tea room is "Food well-cooked and intelligently placed before the guest is sold."

By intelligent service I mean service by women quick in action, neat in appearance, and quiet in deportment.

Much more thought is now being given, and rightly, to the welfare of the helpers, when they are off duty. We have a rest room in which they can lie down and rest or read, when they have time. It is well to carry liability insurance for the staff of workers, and this is usually done by the group insurance plan, which we employ in our tea room. However, that protection should not relax your vigilance on behalf of the welfare of your assistants for whom you are responsible.

Start the day right. It is always well to be on hand before the helpers arrive in the morning, or to be represented there by some reliable person whom you have trained, in your methods. I believe in keeping my assistants and I never wait for them to ask for an increase in salary.

There are many difficulties in the business of serving food. I have recently heard of a hotel proprietor in a large summer resort who said that she had not had a complaint during the entire season. I could only conclude that she had some tactful assistants who kept these complaints from her knowledge. Perfection is our goal, but we can hardly expect to attain it on earth. In my tea room we do have complaints, and they are always welcomed. I say to the helpers: "Do not tell me the compliments you hear about the service here. They will take care of themselves. I want the complaints." All complaints are carefully considered, and I have found the method of calling together all who might be concerned and presenting the complaint to them, as I have received it, more effective than taking the matter up with the individual.

Here are a few "don'ts" for the managers of tea rooms.

1. Don't fail to look into the ice-box in making up your daily menu. "Left-overs" have a direct relation to "turnover."

2. Don't be too penurious with your cook. Food must be well cooked in order to sell well, and to cook it well one must use generous amounts of butter and cream, and other expensive ingredients that go to make a perfect dish. Yet, while we advocate generosity, waste cannot be tolerated. You have not only a right, but a responsibility, to know all that is going on in your business. Here, genius in administration is almost a necessity, but this knowledge thoroughly acquired, much trouble and friction are avoided. Remember, it is your right to investigate every detail of your business, in spite of temperamental spirits in the kitchen. In fact, it is the only way in which you can find the real value of the individual employe.

3. Don't fail to keep in mind the requirements of your guests. In my tea room, the popular thing is a table d'hote service, offering a three-course luncheon for sixty cents and dinner for one dollar. But some people want a la carte service—a chop, or steak, a salad, and dessert. I make these work together and merchandise some of the same articles in each branch of the service.

4. Don't forget to have frequent conferences with your workers. The great pleasure in work comes from doing it a little better than the average, and the best service we can render our assistants is to exact the best from them and reward accordingly. Remember that you, the head of an enterprise, create the atmosphere, and must take the consequences. It is reflected in your assistants. It radiates to your patrons and is just as sincere, serene, tense, generous, penurious, particular, improvident, careful, careless, slovenly, or capable, as is your thinking regarding your enterprise.

5. Don't forget that the price of success in this business is hard work, vigilance in detecting and banishing waste, learning to bear heavy responsibilities without breaking under the strain, and willingness to forego most social pleasures in the beginning until your business is established and your bank account warrants a little letting up. Your work will be constantly on your mind, and the day is long. You cannot take time to form friendships outside your business. But all this does not mean that you must become a one-sided person. Keep the play spirit alive, and if you cannot take time to golf, at least you can indulge in a brisk walk, or visit an art gallery, to refresh your soul. It is perspective we need, and when we are too near a situation, we find our view is foreshortened.

6. Don't be too intent on money making to let slip opportunities to set others in the way of progress. Have your helpers an ambition to do greater things? Help them on. No one truly prospers by keeping others back. Lend them a hand whose fortunes are cast in with yours.

7. Don't worry too much over trifles. Keep a light heart.

To summarize the fundamentals of administrative success, then, let us say it consists of purposeful attitude towards your work, a clear conception of whom you wish to serve and how, an understanding of the requirements of the public and what the service implies, and the ability to merchandise, which includes a great deal, from the selling of your own personality to the selection of the smallest integral part of your enterprise and transmuting it into the check at the cashier's desk.

A BUDGET PROJECT IN THREE STATE COLLEGES FOR WOMEN

S. DEBORAH HAINES

University of Chicago. Absent on leave from Oklahoma College for Women

Plan and aim. The schools cooperating in this project were the Women's College of the University of Delaware, Connecticut College for Women, and Oklahoma College for Women. Each student in certain home economics classes kept itemized accounts¹ of all personal expenditures for one semester or one school year according to the length of the course. Detailed summaries from the other two institutions were sent to the writer at Oklahoma College for Women at the close of the semesters in the school year 1920-1921.

The purpose of the project was to make an intensive study of the personal expenses of a representative group within each college and to make a comparative study of the expenditures of the three groups.

Averages of actual expenditures per student

COLLEGE	SEMESTER	NUMBER OF STUDENTS KEEPING ACCOUNTS	LIVING EXPENSES	POSTAGE, PHONES AND CAREFARE	CLOTHING AND LAUN- DRY	HEALTH	RECREATION AND LUX- URIES	EDUCATION AND OR- GANIZATION	GIFTS	BENEVOLENCE	MISCELLANEOUS*	TOTAL
Women's College of the Univer- sity of Dela- ware.	1	13	162.70	17.79	75.95	4.65	20.54	21.47	15.86	1.10	15.43	335.15
	2	No data										
Connecticut Col- lege for Wom- en.	1	7	268.65	27.56	94.46	10.74	9.52	185.15	27.33	9.51		633.80
	2	8	212.31	34.64	90.37	1.43	27.04†	130.09	12.98	6.89		514.65
Oklahoma Col- lege for Wom- en.	1	46	68.48‡	18.72	81.98	4.76	13.28	28.44	17.99	5.40		238.56
	2	50	69.47§	14.14	48.20	3.62	10.93	16.38	3.96	2.29		168.98

* In teaching budget work, it is advisable to omit a "miscellaneous" column if possible.

† One student in this group included \$135.00 of graduation clothes as "luxury." Perhaps it is correctly placed. It partly accounts for this high average.

‡ Sixteen students paid no "living expenses" because of residing in their own homes or because of working in the dormitory. This makes the average low.

§ Twelve students paid no "living expenses" for same reason as above.

¹ The students used the "Personal Account Book," published by the Woman's Press, 600 Lexington Avenue, New York City.

Comparison of mean and extreme expenditures

	FIRST SEMESTER			SECOND SEMESTER		
	Highest	Lowest	Mean	Highest	Lowest	Mean
Connecticut College for Women...	1000.87	488.67	601.40	747.70	377.90	452.00
Women's College of the University of Delaware.....	692.80	229.47	309.83	No data		
Oklahoma College for Women....	870.41	96.61	228.40	333.60	25.55	158.28

Comparison of figures presented. Why are first semester expenses uniformly more than second semester? Because a new adjustment in living always demands different equipment, such as clothes, books, room furnishings; and also, because trips at Thanksgiving and Christmas require railroad fare and presents. In the second semester, trips are not so frequent, parents do not furnish money quite so freely, and the students have learned in school and by experience to "stretch the dollars."

Why do expenses per student vary so widely according to the institution? It is significant that the cost of living and tuition expenses in the three institutions vary in the same proportion as do the general totals. Board and room per semester at the three institutions are as follows: Women's College, Delaware, \$157.50; Connecticut College, \$250.00; Oklahoma College for Women, \$101.25.

Connecticut college also charges \$250.00 per year tuition, and \$80.00 to \$150.00 additional if the student is taking music. Students' expenses at Oklahoma College for Women are low, because there is no tuition, because board and room are only \$22.50 per month, and because dress regulation requires plain tailored clothes for school wear. These regulations and the fact that many students make some of their garments in clothing classes, explain the low average of \$48.20 per student for clothing during the second semester. On the whole, the difference in cost per school year can be explained largely through cost of tuition, board, and room. The students, as groups, are careful spenders.

What is the significance of the fact that the mean² is each time lower than the average for the same school in the same semester? It shows that a few extravagant students in each college have made the classes' average high. When sufficient numbers are available, the mean is consid-

² The mean is found by arranging total expenditures in this case, according to the size and finding the total that is equidistant from both extremes. Thus, if 1, 2, 7, 9 15 are the totals, 7 is the mean.

ered more accurate than the average, because two or three extraordinary cases should not be allowed to influence, so markedly, a group of fifty that are very similar. The total average cost per year at Oklahoma College for Women is \$407.54; the mean cost per year is \$376.68. Those who have data from other colleges will be interested in making further comparisons.

Results from budget studies. The first result from keeping personal accounts is an opportunity for the student to study her expenditures. She is usually surprised at the distributions. The second result is that she learns to make a personal budget, using past expenditures as a basis, and to measure her expenditure by a standard. A standard budget for one month was worked out at Oklahoma College for Women by one class, with the aid of the teacher and the college president, as follows: Board and room, \$22.50; Books and Lyceum, \$4.00; Stamps and stationery, \$2.00; Laundry, \$5.00; Luxuries, \$4.00; Benevolence, \$2.00; Carfare, \$1.00—Total, \$40.50. Expenses for recreation were understood to come under "luxuries," since there is much recreation available that does not cost money. Clothing, gifts, railroad fare, and health are items varying so widely with different seasons and different individuals that they were not included in this standard.

The budget studies stimulated the classes to ask important questions and to try to answer them. They answered the question, "What does it cost a student to attend college for one year?" Other questions which arose were as follows: "What does it cost a student to fail in one study or one fourth of her regular work?" "What does such a failure cost the state maintaining the institution?" "Are students' 'good times' in proportion to the amount spent for luxuries?" "What is a luxury? Is a ham sandwich a luxury? Is a new dress? Are magazines?" "What gifts have been much appreciated that cost very little? What gifts have been little appreciated that cost much labor, or money, or both?"

The family budget was a natural outgrowth of the personal budget. While studying this, the question of owning an automobile arose. Some of the class believed a man with \$2000 income who did not have an automobile lacked proper respect for his family's comfort. A student with this opinion made a study of automobile costs for her final paper. She used figures given to her by the owners of one expensive and nine inexpensive cars. She found that, if depreciation in value, interest on money invested, repairs and up-keep, insurance, gasoline and oil, taxes and license were included, it cost about as much to own a cheap or me-

dium priced car as it did to keep this family of five. She concluded that this man could not own a car and add to his savings account.

Suggestions. Individual accounts prove a natural approach to an interesting and profitable study of the personal family budget. Home economics classes in general, and particularly major students in home economics, would do well to keep personal accounts and to have a working budget. Why talk imaginary budgets to students, when you can make real ones? Why plan a \$500 wardrobe per year, when your students have less than \$150 per year to spend for clothing? Let us study and teach home economics.

THE RURAL SCHOOL LUNCH TODAY

LOTTIE MILAM

Montana State College, Bozeman

Many years ago the supplementary hot dish for the rural school lunch was an experimental novelty. Today it belongs to the "tested-and-tried" class. Cold noon meals, carelessly selected, five days a week throughout the months from September to April, frequently result in poor digestion, and therefore, poor health.

How does the health of the rural child compare with that of the city child? Investigations made among rural children show that in the rural communities the number of undernourished children with defective bodies is more than double that in the city.

What is this hot school lunch? According to a recent survey practically every state in the union has introduced it to some degree. The hot lunch in most rural schools has been that portion of the noon lunch which is prepared at school. It adds to, and does not attempt to be a substitute for, the lunch brought from home. In many cases it is simply one hot dish, frequently made with a milk foundation.

How do the schools and communities undertake or introduce this work? The weighing and measuring of the children of a school group frequently draws attention to the need of adequate school lunches. Requests then come from parents, teachers, and school boards to those who can advise them about introducing the hot lunch. General interest may be aroused

by a speaker, experienced in this work, using posters, slides, or flyers. Local newspapers advertise the meeting and put the pertinent facts before the public. Some colleges offer correspondence courses on school lunch work. Parent-teachers' associations and mothers' clubs have taken the initiative in placing this plan before the community in many states.

What means are used to obtain the supplies and equipment? In some communities, these are donated by the families, the parent-teachers' associations, or the canning clubs; in other communities the schools have purchased supplies and equipment with money appropriated by the school board, or with special funds raised by assessing each child or giving school entertainments.

Where can food facts be taught in the rural school? Since there is not time in the crowded schedule to introduce a new subject, much subject matter on food and its relation to health can be introduced into the regular subjects. For instance: arithmetic—compute amounts of food needed and cost; language and writing—composition on food products and countries producing them; history—relation of food to comfort, happiness, and progress of the people of the world; geography—source and transportation of food product used in today's hot dish; physiology—groups of food necessary for the body; drawing and manual training—posters, illustrating slogans or facts or announcing the hot dish served; agriculture—methods of growing various food products and types of soil required; sanitation and hygiene—transmission of disease through food, water, insects, and contact.

What are some of the changes due to the hot school lunch? The hot school lunch has brought about greater interest in school work, improvement in the general physical condition of pupils, less need of discipline, increased interest in home work, improved attendance especially on cold days, less hurried eating, habits of cleanliness and neatness, good table manners, and proper eating habits. It has furnished an opportunity for the teacher to inculcate an appreciation of food and to overcome idiosyncrasies in taste, thus introducing variety into the home diet. Smaller quantities of cold lunch are discarded because better planned lunches are brought from home.

Some facts collected in March and April, 1921, concerning the present status of the hot lunch work in the rural schools of the United States are as follows:

Supervision is provided in the following ways: (a) by separate specialists who direct the work; (b) by the Department of Education, alone or

Survey of Schools

STATE	TYPE OF SUPER- VISION*	SERVE HOT LUNCHEES	NUMBER OF PUBLIC HEALTH NURSES	STATE	TYPE OF SUPER- VISION*	SERVE HOT LUNCHEES	NUMBER OF PUBLIC HEALTH NURSES
Arkansas . . .	c			Nebraska	c	33 per cent under one director; 35 schools under another	In 3 large towns
California . . .	c	10-15 per cent		Nevada	c	Few towns	
Colorado . . .	c			New Jersey	c	25 per cent	50
Delaware . . .		1 county 33½ per cent		New Mexico	b	High per cent	Few
Florida	c	12 schools		New York	a		10 full time, 30 in all
Georgia	c	2 per cent		Ohio	a		Many
Illinois	a	575 schools	98†	Oklahoma		50 per cent	
Indiana	c	25 per cent	48	Oregon	c		Few
Iowa	c	33½ per cent consoli- dated, 11 per cent one room	74	Pennsylvania	a, b		
Kansas	a			Rhode Island	d	2 per cent	30 per cent
Maryland . . .	c	167 schools	Few	South Dakota		20 per cent	Most counties
Massachu- setts	a, c			Tennessee	c	Many	Few
Michigan . . .	c			Virginia	a	2 counties	26
Minnesota . .	d	All consoli- dated, 50 per cent of 1 room	50 per cent	Washington	c		
Mississippi . .	c			West Virginia	c		
Missouri . . .	c		Few	Wisconsin	c	28 per cent	
Montana . . .		All consoli- dated, 50 per cent of 1 room		Wyoming	c	10 per cent	10 per cent

* The letters in this column refer to type of supervision outlined above.

† Fifty Red Cross and 48 T. B. nurses; 25 counties have Red Cross nurses for special schools.

in cooperation with the Department of Public Health; (c) by extension service, except in states having specialists who devote their entire time to this work; (d) by extension service in cooperation with the Department of Education or with the Vocational Home Economics Department.

Eight states have hot lunch clubs, 17 states use graphic posters, and 21 states issue bulletins or other material through the Extension Department, the Department of Education, or the Department of Public Health.

Available material. The majority of the states send out material from a central office from which the work is directed. The usual points covered in this material include suggestions for suitable hot lunch foods, equipment, recipes, food needs of the body, foods supplying these needs, diet for children, ways and means, duties of working committees, suggestions for the box lunch. There are some states as Massachusetts, Illinois, Nebraska,¹ Pennsylvania, Ohio,² New Jersey, and New York whose material covers additional points. No attempt has been made to list the material obtainable from other sources.

¹ Playlet, "How Joe's Lunch Disappeared."

² "Ohio's Own School Lunch Picture Story," is a slide lecture with 32 slides.

A very good list of references is contained in Circular No. 9 Agricultural Extension Service, Ohio State University, Columbus.

IRON ANALYSIS OF KALE AND TURNIP GREENS

MARIETTA EICHELBERGER AND MAUDE ASBURY

University of Kentucky

The class of vegetables known as "greens" is one of our most important sources of iron. As far as we have been able to ascertain, no iron analyses of kale and turnip greens have been published. Because of the abundance and popular use of these greens throughout the Southern states, it seemed desirable to make these analyses.

In as much as the iron content of spinach varies,¹ it was thought best to run analyses of this vegetable concurrently with the other analyses, using it in a way as a check.

Method of determination of iron. Of the various ways of determining iron, the method used by Blunt and Otis,¹ that is, the colorimetric method with potassium thiocyanate, was chosen. The standard of known iron content was prepared by dissolving 0.10 gram of iron

¹ Blunt and Otis, *Journal of Home Economics*, 9 (1917) p. 213.

wire (99.9 per cent pure) in 5 cc. each of concentrated hydrochloric and nitric acids, and making up to two liters. One cc. of the resulting solution contained 0.05 mg. of iron, or 0.00005 gram. The standards were then prepared with varying amounts of the ferric thiocyanate, being careful at all times to observe the same precautions as were observed by Blunt and Otis.

In preparing the greens for comparison with the standards, the organic matter was destroyed by oxidation. About 10 grams of the vegetable were weighed into a Kjeldahl flask and the oxidation process carried out. It was found however that upon complete oxidation it was necessary to filter the resulting solution before the addition of the potassium thiocyanate, otherwise a white precipitate, which was formed during the process of oxidation but which gave no test for iron, obscured some of the color and the standards matched were about half as intense as they were after filtering. After filtering, the solution was made up to volume in the normal way and the determinations made.

Results. The results of the experiments are given in the following tables:

TABLE 1
Turnip greens—raw

AMOUNT OF GREENS	IRON IN STANDARD MATCHED	PER CENT OF IRON IN RAW TURNIP GREENS
<i>grams</i>	<i>mgm.</i>	
8.7339 ¹	0.02375	0.0027
10.002	0.02875	0.00287
10.6894	0.02875	0.00268
10.7715	0.0275	0.00255
10.8091	0.02875	0.00265
Average		0.00269

TABLE 2
Kale—raw

AMOUNT OF GREENS	IRON IN STANDARD MATCHED	PER CENT OF IRON IN RAW KALE
<i>grams</i>	<i>mgm.</i>	
9.438	0.0375	0.0039
10.268	0.0325	0.00316
10.005	0.035	0.00359
9.824	0.05	0.00509
10.445	0.02	0.00191
9.337	0.01	0.00107
Average		0.00312

TABLE 3
Spinach—raw

AMOUNT OF GREENS	IRON IN STANDARD MATCHED	PER CENT OF IRON IN RAW SPINACH
<i>grams</i>	<i>mgm.</i>	
9.703	0.03	0.00309
10.790	0.0263	0.00243
10.575	0.0275	0.0026
9.839	0.02875	0.00291
11.734	0.02	0.00255
Average		0.002716

TABLE 4
Comparison

VEGETABLE	PER CENT OF IRON
Kale	0.00312
Turnip greens	0.00269
Spinach	0.002716

FOR THE HOMEMAKER

THE PRICE OF PROGRESS

CAROLINE B. SHERMAN

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What constitutes marketing? Everywhere we hear and read criticisms of our present marketing situation but seldom do we hear any clearly stated analysis as to just what constitutes marketing. We hear frequent discussions regarding the difference between the price paid to the farmer for produce and the amount paid by the consumer, but we hear little regarding what actually takes place between the time the products leave the farm and the time they are bought by the housekeeper for consumption. Improvement in methods is vitally necessary but before much improvement can take place we must have a clear knowledge of the primary necessities of marketing.

In producing for our present commercialized markets, farmers as well as nations have found that they can get best results by specializing on certain crops or kinds of farming according to aptitudes, farming conditions, climate, and soil. This, together with the tendency of population to congregate in large cities, has operated to drive production ever farther from the millions to be fed and clothed. We have grown permanently away from the days when most housekeepers bought direct from their own farmer-market-men. We are no longer content to use only those foods that are locally in season, and we must be willing to take fair-minded stock of the consequences.

The farmer, as a rule, produces quantities ranging from the box to the wagon load, but the smallest unit that can be shipped long distances most profitably is the carload. Some one, therefore, must assemble the small farm lots and adjust the quantities to the demands of the processes of marketing, and this is usually done by the country shipper, carlot buyer, packing house, or other local factor. A carload of apples thus collected looks large to the farmer, but the warehouseman requires many carloads of apples for successful operation. During the winter, however, the demands from the trade reach him in the terms of relatively

small quantities—fifty boxes, perhaps, at a time. These the wholesaler deals with, selling them to the retailer in even smaller quantities, for, as householders cannot and will not go long distances to buy at concentration points, many of the retail stores must be located in business or residence neighborhoods where rents are high and space at a premium. Here the retailer finally sells the apples by the half-dozen or the half-peck. Thus the work of the farmer in collecting his apples, of the country buyer or packing house in forming carlots, of the storage man in concentrating trainloads, which was first broken into by the wholesaler in dealing in dozens of boxes, is finally undone by the retailer in order to fill the specific demands of his customers.

With the increasing use of standards and brands, purchasers are coming to demand with increasing frequency specific grades of goods. The careful grading of farm products has everything to recommend it, but whether accomplished by the farmer individually, by producers' associations at centralized country points as at fruit packing houses, by the country buyer, or by dealers either wholesale or retail, it is a service exacting time and painstaking care if properly done and it is a service that must be paid for. Often regrading must be done several times during the process of marketing as units are made larger or smaller to fit the demands of the trade.

Not only are staple goods now usually graded before sale but fruits and vegetables are rapidly falling into line. The citrous fruits and apples were the first to be graded uniformly by strict standards, but now potatoes, onions, cantaloupes, tomatoes and many other perishables are so sold on the markets. Purchasers have learned the desirability of securing uniform size and quality even by the payment of a higher price and are becoming increasingly impatient with ill assorted commodities.

Practically all farm products require packaging in one form or another in the process of marketing. Apples must be placed in barrels or boxes, lettuce in hampers or baskets, milk in cans and bottles, butter in tubs and cartons, cotton in bales and bagging. Many of them require re-packaging in the course of marketing as in the case of milk. Packaging is necessary for protection to product, for economical carriage and storage, and for convenience all along the line including always the consumer. How expensive these containers may become, in addition to the labor of packing, was forcefully demonstrated during the war.

Processing is almost as prevalent as packaging. The farmer sells cattle, grain, hides, and cotton; the consumer buys meat, bread, shoes,

and clothing. Between the time the products leave the farm and the time they reach the ultimate consumer, cattle must be converted to steaks, grain must be reduced to flour and made into bread, hides must be transformed into leather and then into shoes, and cotton must be made into cloth and then into garments. In each case the intermediate steps of the process are necessarily many. Processing has almost entirely left the farms and has been withdrawn from city dwellings. The results in large scale operations have made great average savings possible but, if both farmer and consumer leave the task to others, the others must have fair compensation.

The actual making of sales in our complicated marketing systems is a function often requiring peculiar qualifications, experience, knowledge, or skill. To sell advantageously on large markets, a salesman must have one kind of knowledge and skill; to sell to individual customers in retail trade requires entirely different qualifications. The first demands extensive information regarding supplies, actual and potential, quantities, qualities, conditions, trends, and competition; the second demands a knowledge of human nature in all its variations and contradictions. As salesmanship becomes more highly specialized it obviously becomes more high priced.

Recent discussions of transportation rates make emphasis on the cost of carriage unnecessary, but it is not generally known that studies show local hauling to be also relatively expensive. Good roads and good equipment may lessen this apparent cost but they, too, are expensive in initial investment and in upkeep and may be considered indirect costs of transportation.

Market preferences, much more potent than most consumers realize, result in cross freights and unnecessary work and cost. In some cities only dark-colored cranberries sell well, while in other cities lighter ones are in sole demand. In some cities dealers can handle only dark eggs advantageously; in others the white egg is the favorite. Shippers of large quantities often find it necessary to ship past their nearer markets in order to reach the markets where their particular variety is especially wanted.

Storing and warehousing constitute a service of much economic importance. With few exceptions all of our crops are seasonal in production but most of them are in demand by consumers the year round. Few farmers have more than the most limited storage facilities and much farm storage is inadequate in efficiency, while city conditions render it increasingly difficult for families to buy supplies very far in advance of

use. Some one, therefore, must store on a large scale to adjust this essential time difference between production and demand. Thus storage becomes both a consumer and a provider. Our products are kept, protected, accounted for, and financed during this intervening time between harvest and harvest. Some products require heated storage, others normal warehousing, and many of them require cold storage or even freezing temperatures. It is seldom that much variation is allowable. Heating, refrigeration, and ventilation are also expensive factors in transportation.

The financing of marketing and storing operations is an essential and hazardous factor. Financing often begins while the crop is still growing when the farmer borrows from his local bank to cover the expenses of harvesting. It is usually necessary through every subsequent step of marketing until the products are finally in the hands of the consumers. Large terminal companies, commission merchants, city banks, all assist in financing market transactions. A single grain company may advance as much as \$1,000,000 to country buyers during the height of the crop movement, and the interest charge is necessarily heavy. Insurance and hedging are used to lessen risk from fire, deterioration, and change in price.

All of these operations do not take place in the marketing of every product, and sometimes they can be and are performed by the farmer or his association, or by the consumer, but as our modern life is now organized, they form the typical process through which our farm products pass from the farmer to the consumer. To make permanent improvement in methods possible it is necessary that we understand all of these functions clearly in all of their phases, and understand their inter-relation as well. Then and then only can we hope to make material progress in the popular program of taking the mystery out of marketing.

REPORT OF A TEST OF FLOOR OILS

MELISSA FARRELL SNYDER

Office of Home Economics, United States Department of Agriculture

The following practical home test of floor oils was made under the direction of the Office of Home Economics, United States Department of Agriculture. The experiment was started early in January, 1921, and continued until June 30, 1921.

EXPERIMENTAL

Three different kinds or types of mixtures were tested. The first consisted of one part of motor or engine oil to four parts of kerosene; the second was made up of one part of boiled linseed oil to three parts of turpentine; the third was a widely advertised commercial floor oil.

The separate mops used for each kind of oil were thoroughly saturated before the floors were first gone over and were moistened about once a month after that. The floors were mopped on the average of once a week. During the course of the experiment the mops were kept in the paper containers in which they were purchased and at no time was there indication of spontaneous combustion.

Four rooms—a living room, a dining room, and two bedrooms—and a hall, all on the third floor of an apartment house, were devoted to the experiment. This apartment house is located on the corner of two streets where there is much traffic, and soft coal is burned in its heating plant. Considerable dust and dirt flies in through the windows and seeps through the window casings, thus discoloring the floors as well as affecting the woodwork, hangings, and furniture.

The floors, of 2½ inch pine, were old and very dark from many coatings of shellac and varnish. Before the experiment was started, however, the floors were scrubbed with a strong solution of washing soda and water until they were of a light shade.

In the bedrooms and the hall the entire floor surface was oiled throughout the experiment. On the bedroom floors the motor oil and kerosene was used; in the hall, the commercial oil. For the first five months the living and dining rooms were partially covered with 9 x 12 rugs and a few small ones, leaving only the margins of the floor exposed for treatment, but during the last month all rugs were removed and stored and the entire floor space of these two rooms also was oiled. The turpentine and linseed oil mixture was used on these floors.

Written notes on the condition of the floors were kept from the beginning of the experiment until the end.

It was found that the bedroom floors, where the motor oil and kerosene had been used, were considerably darkened during the experiment. This effect may be partly due to the fact that this oil was slightly gummy and coal dust and dirt stuck to it. Also this particular oil left a dull finish, but whether or not this effect was due to imperfect removal of varnish, before the oil was applied, can not be positively stated.

The hall floor, on which the commercial oil was used, was also darker than the others but after oiling it had a gloss which would last for some time, notwithstanding the fact that this hall received more wear and tear than any one of the rooms.

The living and dining room floors, on which the linseed oil mixture was used, always retained their light, even color and gloss, and when the rugs were removed there were no "high water marks" around the edges to show where the rugs had been. In fact, the oil seemed to have a cleansing action and in no way discolored the portions treated with it. Such discoloration would have been readily noticed when the rugs were removed.

SUMMARY

A floor oil consisting of one part boiled linseed oil to three parts turpentine had a cleansing effect upon the floors to which it was applied and did not injure the gloss nor darken the floor on which it was used.

The particular commercial oil used in this experiment darkened the floor on which it was used but did not injure the gloss.

The mixture of motor oil and kerosene decidedly darkened the floors on which it was applied, and tended to dull the finish of the wood.

DATA ON WATER HEATING IN THE HOME

Kansas State Agricultural College, in a bulletin on "Water Heating in the Home," gives results of extensive tests.

The object of this investigation was to determine the following factors in the use of coal, kerosene, gasoline, gas, and electric water heaters:

1. The cost of operations, both for supplying hot water continuously and for furnishing hot water for a single definite purpose.
2. The care necessary to operate the heater.
3. The quantity of water which will be given a definite rise in temperature per hour.
4. The practical efficiency of the combined heater and its attached tank.

For a family of three for general domestic purposes, bath and laundry, where the range boilers are well insulated, the following will apply:

FUEL	QUANTITY PER MONTH	COST PER MONTH
Soft coal (\$8.00 per ton).....	300 lbs.	\$1.20
Kerosene (one burner, 15 cents per gallon).....	15 $\frac{3}{4}$ gal.	2.36
Gasoline (20 cents per gallon).....	19 gal.	3.80
Gas (automatic-type heater, \$1.25 per 1,000 cu. ft.).....	2,700 cu. ft.	3.38*
Electric (circulation, immersion, or direct-contact type, 750-watt, at 2 cents per kw. hour).....		7.50

* A note by S. S. Wyer states that, since natural gas has twice the heating energy of manufactured gas, one-half the volume would have done the same work. If the gas cost had been 50 cents per "M", the monthly fuel cost would have been \$0.67.

The heaters tested showed efficiencies (per cent of heat in fuel that was accounted for in heating water) as follows: coal, 18 per cent; kerosene, 37 per cent; gasoline, 40 per cent; manufactured gas, 60-67 per cent; electric, 81-97 per cent.

Tests of the pilot on automatic gas water heaters showed consumptions of from 34 to 127 cubic feet per day.

The advantage gained by covering range boiler tanks is very appreciable. A covering of asbestos cement to a thickness of about three-fourths of an inch reduces the losses 26 per cent. A range boiler tank cover, consisting of an inner lining of asbestos paper, a filling of $\frac{1}{2}$ -inch hair felt, and an outer cover of canvas, reduces the losses 60.7 per cent. A covering consisting of asbestos paper and $\frac{3}{4}$ -inch hair felt, held to the top and sides of the tank by a wrapping of white muslin, reduces the losses 71 per cent.

COMPUTING HEATING VALUES

According to a summary in *The Glass Industry* (vol. 2, 1921), the following average figures should be used in computing heating values.

Producer gas.....	150 B. T. U. per cu. ft.
Coal gas.....	600 B. T. U. per cu. ft.
Coke oven gas	550 B. T. U. per cu. ft.
Natural gas.....	1,100 B. T. U. per cu. ft.

THE FARM WOMAN AND HER SEWING

There seems to be some tendency to urge that the farm woman should do more of her sewing, and save her money. Since she already has long hours, should she not ask herself these questions:

Is the sewing a rest or a burden? To some the sewing might be a pleasure; to others, a care.

What can best be bought ready-made? Experiments have shown that certain things cost practically no more ready-made than the cost of the material. Other things cost no more, but they do not wear so well. Is it possibly not desirable to buy what will wear; for instance, if the garment is to be used by a rapidly growing child, and there is no one to whom it can be passed down? Other things, particularly when they have any hand work, are very much more expensive when bought ready-made.

Is choosing wisely from the mail-order catalogue one of the things that the farm woman should learn? Making a demand for good material rather than fancy trimming will count.

Is the question of more or less sewing one to be decided individually? One woman did her own sewing, and spent the money saved in travel with her husband. Another hired her sewing done, and saved the time to walk in the air with her children. Whenever there is a choice, should not these and other considerations count?

Does the garment made at home always cost less? Is it not something like the ten cent store? Most things cost less there, but occasionally one pays more. Experience and good judgment are needed to decide.

CEDAR CHESTS

Chests made of red cedar heartwood are effective, if in good condition and thoroughly tight, in protecting clothing from clothes moths, it has been found by the United States Department of Agriculture. That is, provided proper precautions are taken first to beat, brush, and, if possible, sun all articles before they are placed in chests. Since it is the odor of red cedar that kills young moth worms, special care should be taken to prevent undue escape of the aroma from the chests.

Of the three stages in the growth of clothes moths—the adult or moth miller, the worm or larva, and the pupa,—the second is the only one that damages fabrics, and the only one killed in cedar chests; but this is not affected after it becomes one-half to full grown. Practically all moth worms hatching within the chests die within one or two weeks after hatching and a surprisingly large number die within two to three days. Of the worms hatching within cedar chests, from the 2,074 eggs recorded in experimental work, none were found alive one month from the date the eggs were placed in the chests.

If clothing is cleaned and brushed with great care and immediately rolled tightly with naphthalene with several thicknesses of unbroken paper, it will remain unmolested by moths. The ends of the package must be doubled back and securely tied or sealed so that no moth can crawl into the package at the ends. Clothes moths will not eat through paper under ordinary conditions. One to two pounds of fresh naphthalene, placed in any chest constructed as tightly as cedar chests, will protect clothing from moth damage just as well as cedar chests.

WHOLESALE PRICES IN UNITED STATES AND CANADA*

(Average of Year 1913 = base 100)

YEAR AND MONTH	FARM PRODUCTS		FOOD		CLOTHS AND CLOTHING		FUEL AND LIGHTING		ALL COMMODITIES	
	United States	Canada	United States	Canada	United States	Canada	United States	Canada	United States	Canada
1913, July 1	101	100	102	99	100	100	99	96	100	100
1914, July 1	104	109	104	96	99	104	95	93	100	100
1915, July 1	108	122	104	96	99	111	90	90	101	111
1916, July 1	118	130	121	118	126	147	108	107	119	134
1917, July 1	199	187	181	172	187	184	192	195	186	184
1918, July 1	224	216	184	188	249	220	166	205	198	210
1919, July 1	246	205	216	184	282	252	171	195	218	218
1920, July 1	236	247	268	222	317	236	252	294	262	257
1921, July 1	115	145	134	143	179	138	184	204	148	177
1921, August 1	118	147	152	146	179	136	182	203	152	175
1921, September 1 . .	122	134	146	149	187	136	178	203	152	172

* From the Barometer Letter prepared by Babson's Statistical Organization, Wellesley Hills, Mass.

EDITORIAL

Metabolism of the Underweight Child. The attention being given to child nutrition in schools, clinics, extension and social centers but parallels the increasing amount of investigative study of the physiology of digestion and metabolism of normal and abnormal children. The arousal of the public to a live concern over the perhaps more superficial aspects of the problem of the undernourished child has no doubt stimulated a considerable part of these investigations now in progress. We are beginning to find out something of what is taking place within the body of the underweight child.

Undernutrition in infants and the changes in metabolism which follow are caused originally by artificial feeding says Uthelm.¹ He says that one of the first effects of failing nutrition is in the circulatory system as indicated by a decrease in certain oxidative powers of the organism. Later follow changes in intermediary metabolism and functional disturbance in the intestinal tract. The food eaten is less well utilized and in severe cases there is a loss of food material in the stools as high as 26 per cent of the food intake, a loss which decreases with improvement in the nutritional status of the child.

The basal energy metabolism of severely malnourished infants has been charted by Talbot² in a new series of observations. He shows the metabolism to be abnormally high for the size of the infant though there is not a noticeable increase until the child is 20 per cent or more underweight; the more the infant is underweight the more calories it produces per kilo of body weight. Older children have been found by Blunt, Nelson, and Oleson³ to show this same excessive rate of metabolism per kilo of actual weight, but here the variation from the smoothed curves for the child of normal weight is apparent even when he is considerably less than 20 per cent underweight. They report an average metabolic excess

¹ Uthelm, K.: Metabolism studies in infants suffering from chronic nutritional disturbances. *Am. J. Dis. Child.*, 1921, 22: 329.

² Talbot, F. B.: Severe infantile malnutrition. The energy metabolism with the report of a new series of cases. *Am. J. Dis. Child.*, 1921, 22: 358.

³ Blunt, K., Nelson, A., and Oleson, H. C.: The basal metabolism of underweight children. *J. Biol. Chem.*, 1921, 49: 247. See also the article by Dr. Blunt in this number of the JOURNAL.

of about 25 per cent for their 8 to 12 year old children as compared with the normal children of the same weight charted in the monograph by Benedict and Talbot.⁴ No close relationship was found in these older children between the per cent of underweight and the excess of energy metabolism.

Just what is the full significance of this high rate of metabolism in the underweight child is not yet apparent. Talbot has estimated that if his infants had weighed what normal infants of the same age do weigh, then the basal metabolism would have fallen more nearly within the normal curve, which shows that the high rate is due to a low body fat content. The body's metabolism goes on apace even though the filling out of the body with fat lags behind. Failure by the undernourished child to absorb and use even that food which is given, taken together with the fact that the child first failed to gain or lose weight because of lack of food, would appear to be a vicious circle difficult to break. Malnutrition does not always yield easily to correction as every physician, mother, and nutrition worker knows. As our knowledge of the physiology of digestion and metabolism of children increases, more light will be shed on the methods of procedure in dealing with the underweight child.

Studies in Coffee Making. The last word about methods of making coffee is far from being said yet as is indicated by the many interesting investigations now in progress. Prescott,¹ working for the National Coffee Roasters' Association, has found that water below the boiling temperature, about 85 to 90 degrees Centigrade, brews a cup of coffee far superior in flavor to that made with water at 95 to 100 degrees. Coffee boiled one and one-half minutes is decidedly inferior to any made at a lower temperature. His judgment is the outcome of a vote of groups of individuals of discriminating taste perceptions who acted as the tasters of his experimental brews. He is led to believe that there is "what may be called a critical temperature in coffee making, which is below the point at which the effervescence takes place, when chemical changes go on in the coffee that permit the solution of more of the astringent or bitter substances. . . . There is the important physiological aspect of the problem, for it may conceivably be that the complex changes brought about at or near the boiling temperature

⁴ Benedict, F. G., and Talbot, F. B.: Carnegie Institute of Washington, Pub. 302 (1921).

¹ Prescott, Samuel C.: Report of Investigations by the Bureau of Scientific Research of the National Coffee Roasters' Association, *The Tea and Coffee Trade Journal*, 1921, 41: 688 (November).

decompose certain substances in the bean with the formation or setting free of materials that are not only prejudicial to the taste of the coffee, but may also have a direct physiological effect of undesirable character."

The stress which professional coffee men heretofore have put on violently boiling water can hardly be discounted so quickly. On the other hand, it is true that percolated and drip coffees, so popular and easily made, do not reach the boiling temperature and yet with the average man pass as very excellent coffee. Prescott's preference for water below the boiling temperature is probably not to be given the approval of the association until further corroborated.

The caffein Prescott believes to exist both in the free state and in combination, though the combined caffein is probably broken up to some extent by the roasting process. If these unbroken caffein compounds have any bearing, as he believes they do, on the known coffee idiosyncrasies of some individuals, then a high roast may be a desirable thing. However, Sayre² intimates that a low roast is desirable for reasons other than the effect on the caffein. The toxic effects of coffee, he says, are due, not primarily to the caffein but to such compounds as furfuraldehyde, pyridine, catechol, the decomposition products formed at the high roasting temperatures.

The art of coffee making, the chemistry of the constituents which give the brew its flavor, body, and aroma, and the effects of coffee upon the metabolism of both children and adults, all offer fertile fields for investigative endeavor.

Belgian Exchange of Students and Teachers. The Belgian Ambassador to the United States and the Belgian Director General of Agriculture and Horticulture suggest that it might be of mutual advantage to the United States and Belgium if a number of American young women should attend the Normal Institute of Agricultural Home Economics in Laeken. It is also suggested that American agricultural colleges "exchange" students or teachers for a time with the Belgian Institute on a "living expense" basis.

The purpose of the Institute is to prepare young women for all phases of rural life. About half of the students' time is devoted to formal instruction and half to practical work. Anyone wishing to enter the institution may open negotiations through the Belgian Embassy in Washington. Under the present exchange rate it would be relatively inexpensive for American girls to take advantage of this opportunity.

² Sayre, L. E.: The Volatile Principles of Coffee. Bulletin of Pharmacy, July, 1916.

The school is in one of the suburbs of Brussels, in grounds that until recently formed part of the royal domain of Hosseghem and have been donated for their present purpose by the royal family. The Queen of the Belgians has been personally interested in the development of the school. Its director, Dr. Jean Lindemans, visited many agricultural colleges and home economics schools in the United States while the plans for the Laeken Institute were being developed.

OPEN FORUM

Establishing Standards in Practice Field Work in Training for Institutional Administration. In following the development of courses in Institutional Administration in a growing number of colleges throughout the country, it is encouraging to find that, in probably every course offered, at least some provision has been made for giving the students practical experience in the field. We all appear to agree, therefore, that such practical experience is essential but it is quite evident that suitable standards have not yet been established and that much careful investigation must be carried on before this phase of the training will be organized in a comprehensive way. What standards should be set for the practice field by the institution? What type of supervision should be required? What order of processes is desirable in order that the practice work may have definite educational value? When should the practice work be given? Should the student receive college credit? Should she be paid? Should she begin work with the duties of a regular employee?

It is hoped that instructors and administrators in the hospital or business fields, who are training students, will use this section for the discussion of any phase of the subject.

—The Editor.

A criticism of college trained women. There is a fallacy, entertained by many so-called "practical" persons interested in large group living problems, that college trained women are not successful in this field of work, especially where the positions carry heavy executive duties and much business administration. Such a generalization is usually made from a limited personal experience and is entirely misleading. The principles back of administrative work demand more than a superficial knowledge of the fundamental sciences. Rarely does a rule-of-thumb worker make much progress in really constructive work, and, again, practice is kept safe and free from the danger of rule-of-thumb work by a constant infusion of science. We must admit, however, that there has been a tendency, in organizing special courses in institution administration, to rely far too strongly on theoretical knowledge, to delay educational activities of the work type as well as to create practice fields where experience is not gained under normal conditions. Technical knowledge can be put to really effective use only where activities take place normally and where the right kind of practical experience is provided.

Present conditions in practice field work. Students are at present often required to carry a somewhat heavy program of laboratory and class work while they are being given practical experience in the field. Under these conditions

they cannot well do justice to both types of work, especially when they transfer quickly from one type to the other. Again, limited experience in the college cafeteria is most inadequate. Large groups must be housed as well as fed, and students should come into very close touch with all phases of such institutional work. There is a growing feeling in favor of a plan which allows the student to spend her entire time on practice work during periods long enough to make her familiar with conditions in a particular field. It is also thought that she should begin this experience early in her training, so as to be able to interpret her class work more intelligently. Her first experience should, if possible, be gained within the college, where dormitories and lunchrooms are available and where conditions can be carefully controlled. It is important, also, *that the college recognize this as a very important part of the training* and provide adequately for the supervision of this work. A busy director may have little time to give to these students and may not be able to adapt her organization to their special needs.

Some practice field requirements. It is wise to make quite definite the conditions under which all such practice work is carried on, when making arrangements for it either within or outside the college. The active coöperation of leaders in the field should be sought, and any institution in which the practice work is done should be approved by the college. It should represent good organization, adequate systems of control, modern methods of business administration, and consideration for relative values. The director who supervises the work should be in close touch with the college and satisfactory arrangements should be made with reference to students' maintenance, hours of duty, supervision, and living conditions. A criticism of the students' work should be sent to the college at intervals. They should become familiar with systems of control and working conditions in storerooms, kitchens, serving rooms or serving counters, dining rooms, linen room and laundry, and with housekeeping methods in the general care of the house. They should also spend some time in the office observing business methods, including the buying of supplies, and assisting in record keeping and office routine.

Students' responsibilities. Students should be made fully aware of their responsibilities. They should earnestly endeavor to fit into the life of the institution, to prove adaptability for this type of work and to maintain high ethical standards. They should keep immaculate in appearance, with suitable uniforms, and have a purposeful and professional attitude toward their work. A careful report of all work done should be sent to the college by each student after being approved by the director.

Some practice field problems. College laboratory courses should give students a sound fundamental knowledge of good methods of work but the practice field should provide them with the opportunity for gaining a fair degree of skill in practical work, under conditions where emergencies are constantly arising. Facility in technique may be developed when the students are gaining

their first experience, probably as regular employees. They should learn to make accurate records of the work accomplished and in a short time to observe conditions beyond those of their immediate tasks.

It must be recognized, however, that administration is a function in itself and that the students are in training to become competent administrators and not skilled workers. If arrangements could be made to have them spend alternate semesters in the field during their junior and senior years, they should devote the greater part of the second semester of practice work to a study of managerial problems. While they are receiving intelligent supervision they should in turn be taught to supervise the work of others, to plan work for others, to inspect intelligently, to analyze conditions and make constructive criticism. Above all they should be assisted in studying general personnel problems and the psychology of directing workers as well as the conditions underlying the philosophy of management.

Some of this practice work may well be taken during part of the long summer vacations, thus reducing the time devoted to it during the regular sessions of the junior and senior years. The director or dietitian should not, however, arrange to leave inexperienced pupils in charge while she takes her vacation. This has been done but is obviously inadvisable. Practical experience intelligently supervised is a good test for the students' fitness for the work, and it will enable the college to judge the students' ability much more definitely. Some will no doubt fall by the wayside, but it is much better that they should find out their lack of ability for this particular type of work before the end of their college course, so that they may transfer to a more congenial field. On graduation they should be able to take an assistant's position instead of going out to gain a haphazard sort of experience in an unsupervised practice field.

KATHARINE FISHER,
Teachers College.

An Inquiry. "I should like suggestions from other teachers as to how they carry out their bread-making lessons. I find it most difficult to obtain satisfactory results, on account of having to hold back the bread or hurry its rising in order to have it ready when the class needs it."

R. G.

BOOKS AND LITERATURE

Spending the Family Income. By S. AGNES DONHAM. Boston: Little, Brown & Co. 1921, pp. 174. \$1.75.

In this book Miss Donham has given a clear, well designed presentation of the family budget, combining accuracy and suggestive definition with comprehensive outline so as to produce a valuable text and reference volume.

There is not only need but demand for books of this character, especially for those which deal with the basic study of home economics, that of the family budget. The teachers of this group of subjects often fail to see that the five divisions of the family income—shelter, operation, food, clothing, advancement—actually comprehend all they are to teach or present. So long as they fail to get this view they are apt to insufficiently relate the different activities, facts, theories, and principles, and the student becomes confused.

Housekeeping is often referred to as a series of unrelated tasks, but this is no more true of it than of any other large business. The business of living is a big business to which all of science and art contributes, yet it is after all a simple affair. We have to be sheltered, clothed, and fed. The better this is done, the better the result. For the business of facilitating exchange of goods we have selected a medium called money. It is through the wise, intelligent use of this that we are enabled to get life in greater abundance. Home economics aims to teach those factors which make intelligent choice possible.

Spending the Family Income conveys all this to us in a simple, direct, and satisfying way. It does not ignore the spiritual or ethical significance of right living or the right use of money, but it does give practical outlines and suggestions in such a way

as to lead all who read the book toward a better understanding of the purpose and meaning of the family budget. It is a good text book, to be recommended to all who teach as well as to those homemakers who are seeking assistance in their household affairs.

The particular service that Miss Donham has rendered to home economics in the publication of this book is in simplifying a subject that occasionally causes trouble by its seeming intricacies. The making and adjusting of a budget is a simple matter. To teach the factors of choice or to learn relative values is a different thing involving knowledge of all those details which make up a long difficult course in household management. This is implied but the book deals simply and directly with the application of the principles of economics to the family income.

HELEN LOUISE JOHNSON.

Women Professional Workers. By ELIZABETH KEMPER ADAMS, PH.D. New York: The Macmillan Co., 1921, pp. 467. \$2.50.

This welcome book is the last and most exhaustive of the series on "Vocations for the Trained Woman," begun in 1910 by the Women's Educational and Industrial Union of Boston. The enhanced importance of the work of trained women under war conditions, their appearance in "the unclassified twilight zone between the professions and the trades," where they demonstrated their competency, increased opportunity for training, all had made pre-war vocational studies entirely inadequate. Only one of Dr. Adams' scholarly mind and wide experience could have accomplished so well the task set of giving us a view of this new terrain now occupied by women workers. We have here descriptions of the new professions

which are attracting women, together with painstaking analyses of the duties connected with them. The very number of them tells the story of the desertion of older fields, notably teaching, by the more adventurous. Everywhere is the evidence of new interest groupings which mark the increased vocational self-consciousness among women.

The first chapters are given over to an illuminating study of the change in meaning of the term "professional," from its earlier and narrower application to a time when a worker is considered professional "who is equipped by ability, education, and experience to maintain and to improve standards of operation in the work in which she is engaged" (p. 7). Chapters V-VII describe the opportunities open to women specialists in health and hygiene, dietetics, and home economics. Chapter VIII is given over to community, civic, and government services; Chapter IX to social service. Chapters XI-XV, dealing with the emergence of women in the commercial and industrial world, could stand as an independent study. A selected and annotated reading list, with a good index, enhance the value of the book.

Dr. Adams' attitude toward the problem of marriage and the profession is refreshing: "It is no longer taken as a matter of course that women will entirely give up their professional work when they marry, and hence cannot expect to receive serious professional consideration. A growing number of professional married couples—most of them young—are working out the problem together, and making a genuine contribution to social adjustment" (p. 31). In fact, although one closes the book with the impression that it will be hard going for some time yet, the road is charted. Especially do we need a statistical semaphore to signal when enough workers have been turned into a vocational block. But later studies need only add to what Dr. Adams has so ably done.

IVA L. PETERS,
Vocational Adviser, Goucher College.

Vocational Arithmetic for Girls. By NETTIE STEWART DAVIS. Milwaukee: Bruce Publishing Company, 1920, pp. 137. \$0.70.

Every teacher of a sewing trade discovers that her students are not able to apply the mathematical principles which they presumably know to the problems that arise in the trade instruction and that a thorough review of these principles with their application to the trade job on hand is necessary.

Text books offering such systematic review and at the same time good selections of pertinent problems are scarce, so that each new book that appears in this field is eagerly welcomed. A valuable addition to the list of available texts has been made by Nettie Stewart Davis, teacher of applied mathematics in the Milwaukee Trade School for Girls.

In this book, Mrs. Davis has, in a simple scientific way, given us the results of her years of experience in helping the trade school girl meet her difficulties. She has succeeded in doing two things which are not always successfully done. Her selection of problems compels a review of fractions, decimals, and percentage in such a logical way that the text can be followed even by the girls who have not completed grade work. In the mixed classes which make up the usual vocational or part time class, this is most important, as it is extremely disconcerting for the girl who is struggling to multiply $6\frac{1}{2}$ by $3\frac{3}{4}$ to find that the next problem involves decimals of which she has a very hazy memory left over from her last contact in her school years some time ago. The problems closely follow the order of "trade jobs" as given in most of the schools for the sewing trades, so that the teacher of applied mathematics will find this book a help and a guide in the arrangement of the problems which she must select from the work room, and of value in furnishing supplementary material upon which she can fall back for home work and class drill. Of course, no text book can be used by the real teacher of applied subjects to supplant the constant touch with the trade room.

The problems chosen are those that Mrs. Davis has found arising in the progress of the Milwaukee girls through the sewing and homemaking training which they receive in the Milwaukee school; and because the book is the product of actual experience and of expert selection and scientific arrangement it is a distinct contribution to the literature of the trade and vocational schools. It will be found helpful to any teacher struggling with the perplexing problem of getting enough material of the right kind for her classes in applied mathematics.

ELIZABETH M. FISH.

The Delineator has recently contained four articles from Dr. Bird T. Baldwin, Director of the Iowa Child Welfare Research Station. The Research Station was established as a part of the Iowa State University for the investigation of the best scientific methods of conserving and developing the normal child, the dissemination of such information acquired, and the training of students for future work. Dr. Baldwin has given to *Delineator* readers practical observations as a result of experimental work which will be of especial value to departments of home economics in which child welfare is considered.

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NEWS FROM THE FIELD

A SPECIAL TRAIN TO CORVALLIS!

WILL YOU JOIN IT?

Since the appearance of the article in the February issue, the Transportation and Executive Committees, after conferring with a number of members in order to gain an idea of the preference in the matter of scenery en route, have definitely selected the Burlington Route from Chicago to St. Paul and the Great Northern Railway from St. Paul, via Glacier National Park and Seattle, to Corvallis, as the official route to the Annual meeting of the American Home Economics Association at Corvallis, Oregon, August 1 to 5, inclusive.

The Burlington is the natural route from Chicago to St. Paul—Minneapolis, since, for 300 miles, it follows the eastern shore of our great mid-continental stream—the Mississippi. For the most part, the rails are in sight of the Father of Waters—with the island dotted stream on the one side and a line of weather-worn limestone bluffs on the other side. There is a fascination about this beautiful waterway that lingers long after one has left its banks. In fact, a daylight ride along the upper reaches of the Mississippi is a rare travel treat.

The Great Northern Railway threads the lake and park region of Minnesota, one of the most beautiful sections of the United States, and traverses the Red River Valley, famous for its immense fields of wheat, to the thriving city of Grand Forks; thence straight across North Dakota, broad and level as the sea, to Devil's Lake, the largest body of water between the Great Lakes and the Rockies. Following the shifting Missouri through the fertile valley of the Milk River to a wealthy plains-and-cattle country, this line, in approaching the main range of the Rockies, affords to the tourist some of the grandest mountain and river scenery which America holds.

Glacier Park is the most talked of place in America by out-of-doors folk. Up there in the northern Rockies in northwestern Montana, there are 1500 square miles of breathing room, loafing space; endless forests, hundreds of sparkling streams meandering through valleys ablaze with vari-colored wild flowers and tumbling over foaming waterfalls feeding many rare and beautiful mountain lakes, while in the "high spots" there are eternal slow moving glaciers astride the pageant of carved and tinted peaks.

The plan is to spend two days in this "high" land and breathe the breezes quickened by the glaciers, flavored by the mountains and streams, and perfumed by the pines and flowers. If you are a fisherman, you'll enjoy battling with the cut-throat trout; if you are a hiker, there are no end of trails to follow—to your heart's content; if you like to ride, a sturdy little mountain pony will carry you over sky line trails over and along the Continental Divide.

West of Glacier Park, the Great Northern winds through and across the Rockies to Spokane which styles itself "the metropolis of the inland empire" and then strikes straight-away across the great wheat country to the valley of the Wenatchee, of apple fame; zig-zags across the evergreen covered mountains of the Cascade Range; and lets itself down to Puget Sound—often referred to as "the Mediterranean of America"—closely following the eastern shoreline to Seattle which Seattle-ites are pleased to term "the seaport of success." En route to Portland, the ride is an interesting one for the main down a fertile valley bordering on Puget Sound and between two rather widely separated mountain ranges.

The present plan is to leave Chicago at 10:00 A.M. on Wednesday, July 26, and arrive Glacier Park at 8:00 A.M. on the morning of Friday, the 28th. The itinerary for the two days in the park is: leave Glacier Park Hotel by auto 8:00 A.M., Friday morning, arriving Many Glacier Hotel at 12:45 for luncheon. For the afternoon, a choice of a hike or saddle horse trip to Iceberg Lake and return, taking dinner and lodging at Many Glacier Hotel. On the twenty-ninth, leave Many Glacier Hotel at 8:00 A.M. by auto, arrive St. Mary's at 9:45 A.M.; leave St. Mary's via launch at 10:30 A.M., arrive Going-to-the-Sun Châlets at noon for luncheon; leave at 2:00 P.M., reaching Glacier Park Hotel at 5:30 P.M. and, after dinner and a short rest, leave for the West. The daylight ride from Spokane to Seattle is one long to be remembered. Arriving Seattle at 8:00 P.M. on Sunday, there would be time for "a trip about town" and the journey to Portland before 8:00 A.M. the next morning.

The cost of the trip from Chicago, including round trip railroad fare, sleeper ticket from Chicago to Portland, including stop overs, meals en route, and the expense of the two-day side trip in Glacier Park is estimated at approximately \$170 per person. This figure is based on railroad fares in effect during 1921. The rates to be effective for 1922 will be no higher and probably will be lower. The expense to be added for the return journey will depend, of course, largely upon the route selected by the members, the stop overs made, length of stay, and so forth.

Members who may find it more convenient to pass through St. Louis, Kansas City, or Denver, instead of Chicago, may have the option of joining our party at St. Paul or may take advantage of the through sleeping car service offered by the Burlington Route direct via the Big Horn Mountains of Wyoming, the Custer Battlefield, and Great Falls, and meet with the main party upon arrival at Glacier Park.

The advantage of traveling in a special train is obvious. Aside from enjoyment of special service all along the line, there is an unexcelled opportunity to make new acquaintances and renew old acquaintances as well as to discuss Association matters before our arrival at the convention city.

Further details bearing on the trip, will be announced from time to time.

Any communications or requests for information should be addressed to the Chairman of the Travel Committee, Miss Nina Streeter, 1370 East 54th St., Chicago.

The National Society for Vocational Education held its fifteenth annual convention, January 5-7, 1922, in Kansas City, Missouri. The Section on Homemaking Education presented an excellent program and was well attended. Margaret Johnston, State Supervisor of Wisconsin, was elected chairman of the Section for next year, and Jessie Harris, State Supervisor of Texas, was appointed a member of the executive committee. Among a number of resolutions passed by the national organization was the following:

WHEREAS, This Society recognizes the importance of training in vocational home economics and realizes that more funds must be provided for the States to stimulate this work, be it

Resolved, That (1) We reaffirm our endorsement of the Fess Home Economics

Bill. (2) We urge that a committee be appointed to coöperate with similar committees appointed by the State Directors and other organizations pushing this bill. (3) We recommend that as soon as possible a representative of this committee confer with the members of the Educational Committees of the National Congress as to the advisability of reintroducing this bill and the best methods of promoting its passage so that funds will be available for this work during 1922-23.

Vocational Conferences. In attendance at the two regional conferences called by the Federal Board for Vocational Education were the state supervisors, the administrative heads of the home economics departments, and the women in charge of teacher-training in colleges in the states of

the Southern and Eastern regions. The Eastern region comprises New England, New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, and Ohio. This conference was held Dec. 19-21, 1921, in New York City. The Southern region is made up of the ten southern states. This conference was held Jan. 9-12, in New Orleans.

Public Health Service Institutes.

In order to meet the insistent nation-wide demand, the Public Health Service arranged a series of Institutes to be held in the larger widely scattered cities of the United States. These began with Hot Springs, Ark., in November, and have been held in New Orleans, Columbia, S. C., Dallas, Tex., Birmingham, Ala., Memphis, Louisville, Indianapolis, Pittsburgh, Cleveland, Lansing, Mich., Chicago, Minneapolis. Other cities and dates so far listed are as follows: Portland, Oreg., and Kansas City, Kans., April 10-15; Spokane, Wash., and Newark, N. J., April 17-22; Helena, Mont., and Albany, N. Y., April 24-29; Denver, May 1-6; Washington, D. C., late in May. Some dates in the schedule remain vacant, and these are being rapidly allotted.

The Institutes were planned to run for a week. The basic courses include from three to six lectures on tuberculosis, child hygiene, nutrition, clinics, and health centers, communicable diseases, non-communicable diseases, industrial hygiene, sanitary engineering, administrative problems, mental hygiene, medical social work, syphilis, gonorrhea, protective social work, and the delinquent. Single lectures are also given on special occasions.

Construction for Housing. There was a decided increase in the construction of dwelling houses in this country during the first ten months of 1921, according to information obtained by the Civic Development Department of the Chamber of Commerce of the United States. Construction figures, furnished by forty-four important cities, show that during the period from January to October, 1921, about \$603,000,000 went into new construction,

while during all 1920 the total in the same cities was only \$8,000,000 more. During the shorter period in 1921, 57.9 per cent of the total was for dwelling houses as against only 36.1 per cent in 1920.

IOWA

The Iowa Home Economics Association held its Eighth Annual Meeting in Des Moines, November 3rd and 4th, Mrs. Helen Wagner, Supervisor of Home Economics, Des Moines, presiding. The Association has a membership of one hundred forty-eight. The secretary is Lillis Knappenberger, Iowa State College.

The program was as follows: Recent Research in Nutrition, Dr. Ruth Wheeler, Professor of Nutrition, Medical College, State University of Iowa; Nutrition Classes for Children, Dr. Caroline B. Hedger of the Elizabeth McCormick Memorial of Chicago; School Projects in Home Economics, Helen Goodspeed, former Supervisor of Home Economics in Wisconsin, and Julia Hurd of Iowa State College. The Des Moines school children, under the direction of Ella Langenberg, of the Abbott Educational Company, presented a playlet, "Color in Dress."

A tribute was paid to the memory of Dean Catharine MacKay, who was largely responsible for forming the association. She served as secretary, as president, as chairman of its most important committees. Every teacher of home economics in Iowa has felt the magnetism of her personality, her earnestness, and her enthusiasm. They have served their communities better because of her inspiration, her fine conception of service.

A Memorial Service was held for Dean Catharine J. MacKay on December 18, 1921. Brief addresses were given by some of the women closely connected with her in various lines of work—Mrs. James A. Devitt, a member of the State Board of Education, Flora Dunlap of the Roadside Settlement, Des Moines, and Mrs. Cora Whitley, Chairman of the State Council of National Defense. Louise Wiese, President of the Woman's Guild, represented the student

body, and Acting Dean Walls, Dean Curtis, and President Pearson spoke for the faculty. Plans were announced concerning a permanent memorial in the form of a student loan fund or scholarship.

Club News. Iowa sent thirty-seven girls and leaders to the International Stock Show in Chicago. In 1920, 33 $\frac{1}{2}$ per cent of the Iowa group represented home economics projects, while in 1921, 80 $\frac{1}{6}$ per cent represented home projects. This shows a remarkable growth in this line of club work. Iowa girls at the show put on demonstrations in house furnishing, labor saving devices, garment work, canning of meats, uses of dried fruits, and table setting.

Boys and girls club work took on a new aspect when the national committee, composed of prominent business men, announced that G. L. Noble had been appointed national secretary. Mr. Noble, with headquarters in Chicago, will devote his entire time to furthering the interest of junior work in cooperation with agricultural extension forces. Mr. Noble had charge of the 560 champion boys and girls who had been awarded trips to the International from 26 states and Ontario, and he planned for them a real educational week, with visits to Field Museum, Art Institute, Swifts, Amour's, and the Wilson packing plants, International Harvester Company, Chicago Board of Trade, and Marshall Fields, as well as to the Stock Show itself.

At the big club rally, secretary of Agriculture Wallace, J. W. Coverdale of the American Farm Bureau Federation, George Farrell of Washington, and representatives of the Chicago Association of Commerce were guests.

The annual meeting of the County Agents, Home Demonstration Agents, Club Agents, and Extension Specialists was held at Iowa State College, November 15-18, 1921. The first meetings were given over to reports, plans for new work, discussion of weak points, and methods of strengthening the work. Community program development was emphasized. Dr. Caroline Hedger, of the Elizabeth McCormick Memorial, Chicago, spoke on "Some Interesting Phases of Nutrition Work" to the Home Demonstra-

tion Agents, and later addressed a general meeting on "The Farm Bureau in Relation to Public Health." Later discussions covered the training schools in leadership established for farm bureau women, the teaching of food values, a summary of the new home management project, the refinishing of furniture project, plans for Girls' Club work, and the work at the state fair.

KANSAS

Teachers Meetings. Four state meetings of teachers of home economics were held in Kansas in November—one at Topeka, at the time of the annual meeting of the State Teachers Association, another at Hays, the third at Wichita, the fourth at Pittsburg. The subjects for discussion were the linking of the home economics work in the schools with the home, legislation affecting home economics, newer aspects of nutrition, and the commercial possibilities of home economics training.

Kansas State Agricultural College. Nina B. Crigler (A.M. Columbia University) has been appointed State Home Demonstration Leader at the Kansas State Agricultural College. Miss Crigler has been a member of the staff at the University of Illinois both as a teacher and in extension service. She has also served in the California Normal College, Santa Barbara, College of Industrial Arts, Denton, Texas, and as Home Economics Supervisor in Texas.

Dr. L. Jean Bogert, Professor of Food Economics and Nutrition, presented a paper on Methods of Teaching Applied Sciences to Home Economics Students in Vocational High Schools at the meeting of the National Society for Vocational Education held in Kansas City, Mo., January 5 to 7, 1922.

MARYLAND

The Home Economics Section of the State Teachers Association of Maryland held its sixth annual meeting November 26, 1921, at the Western High School, Baltimore, with the president, Elizabeth Swick, presiding.

Venia M. Kellar, State Home Demonstration Leader, explained the policies of the

Extension Department of the University of Maryland. Pearl MacDonald, Professor of Home Economics Extension, State College, Pa., impressed upon home economics workers their responsibility for developing home making as a fine art. Dr. C. F. Langworthy reported several phases of work now carried on in the Office of Home Economics, U. S. Dept. of Agriculture, and illustrated this work by food charts, and samples of repair work in clothing and home furnishings.

The question of affiliation was presented by Keturah Baldwin and emphasized by Anna Richardson and Mrs. Calvin. The Section voted to become a state association and to affiliate with the American Home Economics Association. The following officers were elected: President, Frances Zuill, Supervisor of H. E., Baltimore City Schools; Vice-President, Mabel Stevenson; Secretary, Miss Troy; Treasurer, Corrinne Hibbard.

The state members and the guests were entertained at dinner by the Baltimore Home Economics Association.

The Program of the Baltimore Home Economics Association for January was in charge of Mrs. Agnes O'Dea, Head Dietitian, Johns Hopkins Hospital. Mrs. O'Dea and her staff entertained the Association at the Hospital and arranged for the discussion of Dietitians' problems as follows: Social Service in Hospitals, Esther Wright, Johns Hopkins Hospital; Feeding Ex-Service Men, Ruth Gubtel, U. S. Public Health Service Hospital, Fort McHenry; Purchasing and Preparing Food for a Hospital, Florence Nolan, University of Maryland Hospital.

A tour through the kitchens and supply rooms gave an opportunity to see modern equipment and to observe the efficient service of the Dietary Department under the direction of Mrs. O'Dea.

NEW YORK

The Sewing Exhibit of the Domestic Art Department of the Buffalo Public Schools, held in connection with the New York State Teachers Association convention, was really a sewing exhibit without sewing. All types of work from the fifth grade through

high school were shown, together with the tools and paraphernalia used, such as charts, mounted specimens of raw materials, framed collections of processes of manufacture of tools and materials, and posters of all kinds. These devices form a collection used as a circulating library by teachers of domestic art who borrow these charts or exhibits for use in connection with their regular work.

The exhibit was divided into several sections as follows: raw materials and processes of manufacture; the tools used in working and labor-saving devices; actual articles made by the pupils showing the types of work done in all grades; health charts and posters; and various phases of the development of the home.

The section devoted to raw materials and processes of manufacture consisted of charts, mounted exhibits in separate cases showing the four fibers commonly used in all stages of preparation for use as finished products. There were mounted exhibits of pins, needles, hooks and eyes, thimbles, scissors, emery and carborundum, and buttons, showing each step in the manufacture of each of these necessities.

The exhibit of tools and labor-saving devices included a model loom made in the manual training departments of the Buffalo Public Schools; the various types of flat irons from the old sad iron to the latest models of electric irons, including the recently invented Tommy iron used in millinery; standard sewing machines, motor attachments, and electric portable machines; measuring devices; a well equipped box for teacher's supplies for ordinary class work; a pupil's supply box, a sewing bag, and a small suit case used by the older girls for carrying home project work.

In each grade exhibit, there were working models of projects for that year; for example, a 9th grade middie blouse showing all processes of construction.

A special exhibit on hygiene illustrated the use of posters, mottoes, drawings, and quotations in emphasizing the necessity for recreation, rest, exercise, diet, and cleanliness in persons and belongings. Most of these were made by teachers, but many posters on health were furnished by the

National Child Welfare Association of New York.

One of the unique features was an exhibit, showing the development of the house from the primitive to the modern dwelling, and including the tree house, the mud hut, the stone house, the cliff dwelling, and the log cabin. Drawings, scrap books, photographs, magazines, and bulletins showed the different types of modern homes.

The book collection showed good publications on all phases of home economics. These books are used by both day and evening teachers.

The exhibit was the work of Laura M. Weisner, Director of Domestic Art, and her assistant, Helen W. Jaeger.

Summer Courses. There will be offered, in the summer session (July 10-August 18) of Columbia University at Teachers College, a six point practicum course entitled "Vocational Homemaking: Construction of Courses for Schools and Teacher Training Agencies". Dr. David Snedden, Professor of Vocational Education and Educational Sociology will administer the course, aided by Professors Cooley, Marshall, Sophr, and Winchell in Home Economics.

The course is designed especially for supervisors of teachers and trainers of teachers. Chief attention will be given to studies of social needs and educational aims in the general field, but studies of new problems of method—home projects, practice housework, coöperative residence work, and the like—may be undertaken if desired by individual students. Address all correspondence, relative to admission, to Dr. David Snedden, Teachers College, Columbia University, New York City.

The Junior Red Cross has established a \$5,000 fund to aid parents in buying glasses for their children. Already 200 children have been given "new eyes", according to a report issued by a local chapter of the Red Cross. The fund is self-sustaining, in that the children pay back the cost of their glasses on the installment plan.

Own Your Own Home Exposition.—The Executive Committee of the Fourth Annual Own Your Home Exposition has announced that the show will be held in the

69th Regiment Armory, New York City, April 22 to 30. This committee represents the architectural, real estate, lumber, and paint interests, the savings and loan associations, and the development and sales companies.

A committee has also been formed to aid in directing the Exposition to be held in Chicago in March. This committee will stimulate the "Own Your Home Movement" nationally and will be ready to coöperate with communities anxious to follow the advice of President Harding's Conference on Unemployment which went on record at Washington as urging a national revival of the building industry. At that time the Conference issued the statement that the greatest area of relief of the unemployment situation lay in the construction of more homes. There is a country-wide trend toward home building because of the reduction of building costs over previous building costs.

OHIO

The Ohio Home Economics Association held its winter meeting Wednesday, December 28, 1921, in Columbus, in conjunction with the Ohio State Teachers Association. The meeting was called to order by Mrs. Blanche B. Bowers, President.

At the morning session, Professor J. F. Lyman, of Ohio State University gave a lecture on "Recent Developments in Human Nutrition." Dr. Hopkins, Medical Advisor of the Columbus public schools, summarized the work being done by the penny lunches through the agency of the Parent-Teachers Association. Lucia Johnson, Director of Child Welfare, Ohio Institute of Public Efficiency, spoke on "Woman's Part in Policies, Politics, and Progress." Faith R. Lanman, Head of the Home Economics Department, Ohio State University, outlined the work being done to encourage the use of Ohio wheat. Mary Sweeny, President of the American Home Economics Association, addressed the group on the "Professional Responsibilities and Opportunities of Home Economics Women."

At the business session it was voted to adopt the constitution as reported by the

constitutional committee, and to affiliate with the American Home Economics Association.

WEST VIRGINIA

The Home Economics Section of the Vocational Education Society of West Virginia met in Huntington in November 1921. Isabella Wilson of Marshall College was elected chairman for the next year, and Eloise Thornburg of Huntington High School was continued as Secretary.

WISCONSIN

The School Bacteriologist. In order to meet emergencies for the protection of children against diphtheria the Board of Health, Shorewood, Milwaukee, has launched an experiment to demonstrate, if possible, that the small community need not continue in its present position of utter helplessness. The home economics teacher, supplementing her college course by a short, intensive course of training in the laboratory of a city health department, will become also the school bacteriologist. Cultures from the promiscuous sore throats will be given to her for examination.

Agnes Olson, a graduate of the University of Illinois and an experienced teacher of home economics, has been engaged to undertake this work in the schools of Shorewood.

NOTES

Emma H. Gunther and Lydia Ray Balderston of Teachers College sailed on the S. S. Golden State, January fourteenth, to spend the spring in China and Japan. Their itinerary will include Honolulu and Manila. The greater part of the time will be spent in Canton, Peking, Shanghai, and Nanking.

Minna C. Denton, Assistant Chief of the Office of Home Economics, U. S. Dept. of Agriculture, visited Teachers College in December and spoke to the classes regarding the work of that office.

Susan Blakey, Department of Home Economics, University of Missouri, was married December 27 to Dr. Colin Goodykoontz of Boulder, Colorado.

Lorraine Steer, formerly of the University of Missouri, and later an instructor at the University of Arkansas, was married January 12 to Rex Hayes of Chicago.

The University of Missouri has received a bequest of \$50,000 from the estate of the late J. K. Gwinn, for the erection of a home economics building in memory of his wife, a former student. The money will be used for the enlargement of the present building which will be called the Marie Louise Gwinn building.

The Western Arts Association will meet in Cincinnati May 2-5. All who are interested in arts, industrial arts, or household arts, are urged to attend this convention.

FOREIGN

Nursery Schools have been developed in England, within the last three years as a part of the general educational system. The purpose of these schools may be said to be somewhat wider in scope than that of the American Kindergarten, as they are institutions "providing for the care and training of young children aged from two to five years, whose attendance at such a day school is necessary or desirable for their healthy physical and mental development. Such a school has, therefore, a twofold function: first, the close personal care and medical supervision of the individual child, involving provision for its comfort, rest, and suitable nourishment; and second, definite training—bodily, mental, and social—involving the cultivation of good habits in the widest sense, under the guidance and oversight of a skilled and intelligent leader, and the orderly association of children of various ages in common games and occupations."

Of the twenty-six schools in operation, eight are in London. Unfortunately a shortage of funds has hindered the development of the schools, and many of those now in existence are financed wholly or in part by private funds. One, in London, is entirely supported by the London County Council.

In no case does there seem to be any idea of using the Nursery Schools as laboratories, except for the training of teachers. However

there are regular training schools for nursery school teachers. Two particularly interesting ones are the Gipsy-Hill Training College in London, under the direction of Miss De Lissa, and the Manchester College for Teachers, under the direction of Miss Grace Owen. Miss Owen has written a book called "Nursery School Education" which was reviewed in the JOURNAL for August, 1921.

A Degree in Household Science.

The only college in Great Britain which offers a degree in household science is the King's College for Women of the University of London, of which Dr. Janet Lane-Claydon is the director. It takes three years to complete the course and many of the graduates go into the teaching field, though some are employed as directors and cooks in institutional kitchens. There is some discussion regarding the possibility of the Edinburgh School of Cookery and Domestic Science installing such a course in the University of Edinburgh. Miss E. D. LaCour is principal of the Edinburgh school. She is interested in securing information regarding the preparation and content of courses of college grade.

In general the courses offered in the institutes and training schools of Great Britain are intended for teachers, and the practical side rather than the more theoretical side is emphasized.

Health Visitors. In England the interest in health and health education brought about by the war has resulted in the development of courses designed for so-called Health Visitors, who resemble in some ways our Public Health Nurses. They receive a training which is made up of a study of the theory of nursing and social science combined with some food work—such a course as might be given to a Visiting Housekeeper. Health Visitors also have some practical experience in infant welfare centers and similar institutions before they are gradu-

ated. One of the best examples of this kind of course is that given at the Battersea Polytechnic Institute, under the direction of Miss Biddeleux.

The International Federation of University Women, with which the American Association of University Women is affiliated, has its headquarters in London, and Miss Theodora Bosanquet not only is secretary of the English organization but represents the International Federation as well. Through Miss Bosanquet, who has established connections with members of various institutions, college women from the United States or other countries are enabled to visit any of the universities and colleges in England. Letters of introduction supplied by Miss Bosanquet insure visitors receiving every attention.

Continuation Work. Visitors in London who are interested in continuation work should get in communication with Miss C. R. Gordon, of the London County Council, Educational Offices, Victoria Embankment. The most interesting phase of the work as developed at present is that carried on in the evening schools for women.

A Conference on Infant Welfare was held in London July 5 to 9 under the direction of Miss J. Halford, secretary of the National League for Health, Maternity, and Child Welfare. This conference included many visitors from outside England. The published report may now be obtained from the office of the League, 4 Tavistock Square, London, W. C. 1.

A Child Welfare Conference which was supposed to be international in scope was held in Brussels July 18 to 21. It was attended by representatives from various countries. The attendance was rigidly limited to persons authorized by various governments, who were, in the majority of cases, officials. The conference was conducted in French.

THE

Journal of Home Economics

For those interested in Homemaking, Institution Management,
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No. 4

THE RELATION OF THE EXTENSION SPECIALIST TO THE
RESIDENT STAFF IN HOME ECONOMICS¹

A. R. MANN

Dean of the College of Agriculture, Cornell University

In the first years of extension teaching as an activity of the land-grant colleges, the work was done by persons whose chief duty was the teaching of students and the conduct of investigations or experiments at the institution. The primary purpose of the meetings about the state was literally to extend the teachings of the college to the persons on farms and in farm homes who could not otherwise gain the benefits from direct contact with those who had special opportunities for studying, with the aid of science, the problems of the land. There was then no question of relationships, harmony in subject matter, keeping abreast, and the kindred problems which trouble administrators and teachers today. In most cases, the complete course, from the experiment which revealed new facts, through the classroom and out to the farms, was embodied in a single individual. In theory, at least, this unity of discovery and impartation of knowledge approached the ideal. It added authority to resident and extension teaching. While it had obvious limitations, it also had advantages which are not entirely compensated for in the methods developed later. It is in the recovery of these advantages, to whatever degree may be possible, that the present-day problem in part lies.

The division of labor. The division of labor occasioned by the segregation of work and workers into the three compartments of teaching,

¹ Abridged form of an address presented at the Meeting of the Home Economics Section of the Association of Land-Grant Colleges, New Orleans, November, 1921. The full article will be found in the 1921 Proceedings of the Association of Land-Grant Colleges.

research, and extension, respectively, which generally characterize the land-grant institutions today, was an inevitable consequence of the growth of each of the three primary methods of agricultural progress by means of education. It was encouraged by legal enactments in various states, and it was immensely forwarded by the passage of the federal Smith-Lever Act, with its large endowments which could be applied only to the maintenance of coöperative extension work in agriculture and home economics, necessitating the appointment or assignment of persons to engage only in nonresident teaching and demonstrations. On the whole, the change has unquestionably been highly beneficial to all three lines, and has been an important contributing cause to their more recent rapid advance. Increasing specialization is at once a means and a result of progress. But it cannot always be defended as an unqualified advantage. Its complete realization has, in the present instance, involved sacrifices on the part of each of the three divisions of what is fundamentally one great task of increasing human knowledge in the broad fields of agriculture and home economics.

Without attempting to go into all the questions which this division of labor has created, we are here concerned only with those that affect the extension specialist in her relation to the resident division having to do with the same field of knowledge.

Basic to the whole problem of relationships is the consideration of the function of the specialist with reference to extending the teachings of the institution, or, as this has been interpreted to mean, the subject matter as formulated and vouched for by the resident and research staffs. What is the implied responsibility, and what are the facts in the situation?

The purpose to extend the teachings of the institution. Historically, the development of agricultural education in the United States was, in general terms, first, the organization of institutions for teaching agriculture and the mechanic arts; second, the establishment of experiment stations for the acquisition of knowledge; and third, provision for carrying the knowledge supposedly accumulated at the institutions to persons resident in the localities throughout the states. The colleges and stations had been at work for some time, and had made really notable progress, before a widespread demand arose that their accumulations of knowledge should be carried to the people by more speedy and direct means than the slow infiltration of agricultural college students and the uninspiring perusal of bulletins which were received with a measure of distrust. The discussions preceding and attending the passage of the

Smith-Lever Act dealt largely with the consideration that the land-grant colleges and the United States Department of Agriculture had made large advances in knowledge which had not yet found their way to the rank and file of American farmers, who would undoubtedly benefit by the utilization of much of it in their practice. The specific demand was for a means of "extending" the findings of college and station to the people beyond their immediate confines. It was assumed to be the province of the resident and research staffs to accumulate and organize the knowledge, and of the new agencies to carry it out. The organization of the extension work must be such as to accomplish this purpose. This means that there must be a close union, not an occasional conference nor merely a cordial attitude, between the extension specialists and the resident teachers and investigators.

The need for the specialist in the organization of extension service. In a few places the need for extension specialists is not fully accepted, the assumption being that the county agents or home demonstration agents can fully meet the needs. This indicates an immature development of extension service. The agents in the counties stand as "first aids," and can take care of most of the routine or more simple and elementary matters. For the most part their equipment consists of practical experience, and seldom more than an undergraduate course in home economics. Their time is fully occupied in doing things. Progress in home economics subject matter is going forward somewhat rapidly, and at best these agents can visit the points of largest accumulation only infrequently and for brief periods. For the most part they render excellent service, but they are generalists, not specialists. Farmers and farm women are increasingly needing and in many places demanding the aid of specialists. The successful agent will create a greater demand for specialists to maintain a strong, progressive work.

The status of the extension specialist. It is no reflection on the extension specialist to assert that she must depend in an important degree on the resident teaching and research divisions for the means of keeping informed on current progress in the field of knowledge. The persons in these divisions dwell at the point of accumulation, and the energies of the institution are devoted to providing them with the time, facilities, libraries, and equipments to enable them to make original contributions to knowledge and to place immediately at their disposal the most reliable reports of progress made elsewhere.

On the other hand, extension teaching, by its very nature, carries one away from these sources, and places the specialist in an atmosphere where empirical knowledge predominates. The inconveniences of constant traveling do not encourage or admit of the best habits of study. The opportunities for original research on the part of the individual are practically non-existent; and the tendency of the federal authorities to urge that persons engaged in the coöperative extension service shall give full and undivided attention to extension, the rigid insistence that persons paid from the Lever funds shall never, on those funds, engage in any investigations whatsoever, even in simple tests or trials which have for their purpose checking or verifying supposed facts to the satisfaction of the specialist prior to their utilization for general demonstrations, and the further insistence that the specialists can, as Smith-Lever employees, demonstrate only what is assumed to have reached the stage of settled fact at the hands of other workers establish the ideal that extension specialists shall be avowedly second-hand teachers. The resident teacher, surrounded as she is with every incentive to growth, seldom, if ever, attains a foremost place if she engages in no investigations on her own account. The extension specialist is, in the nature of the case, doubly handicapped. In the long run this is likely to prove to be the most embarrassing problem in the whole extension service, because of the difficulty of combining the two types of effort.

Observation indicates that the turnover in extension specialists is unduly rapid. In my own experience, the highest-grade persons whom we seek to engage as specialists have an increasing tendency to urge that they do not care to accept appointment unless permitted to do some resident teaching or research, or are assured of adequate periods for study. We are very rapidly passing from the time when the most valuable specialists will be content to engage continuously in field work, or when the advancing demands of farmers and farm women can be satisfied by persons who allow themselves to be removed from frequent, direct, and intimate association with the sources of expanding knowledge. The problem becomes a triplicate one of keeping the specialists abreast, keeping them content in their important work so that their tenure of service will be long, and enabling them to meet adequately the constantly enlarging horizon of farmers and farm women.

The qualifications of the individual. The first condition is to have the right kind of specialist. The fundamental training and the study habits and characteristics of the individual are the best guarantee as to whether she will keep in touch with the progress of knowledge in her field. No

one should be appointed as an extension specialist who is not in every way qualified for appointment to the college faculty. No form of organization or other expedient will compensate for lack of zeal and capacity for technical and professional development on the part of the specialist herself. The greater and more sustained the zeal, the less will be the problem, whatever the form of organization.

The form of organization. The form of organization is, however, very important. Taking the country as a whole, we find: (1) institutions where teaching, research, and extension are all developed in a single department of home economics under a single administrative head; (2) institutions where the extension specialists are organized wholly apart from and coördinate with the resident division, the two, however, having no official relationship; (3) institutions where there exists an extension organization in home economics, but no resident teaching nor research work in the subject, the resident work being established, if at all, at a separate state institution. What is to be done as regards the specialists, under these various circumstances? Let us consider these in reverse order:

1. We have the situation in which there exists at the land-grant college only an extension organization in home economics, with no resident work whatever at the same institution. I say without qualification that under such circumstances the efforts should be unremitting to obtain the means for establishing a full-fledged resident department of home economics at the institution. If the land-grant colleges are to maintain extension in home economics, as the Smith-Lever Act charges them to do, the prerequisite to success is the establishment in the colleges of strong resident departments. Extension cannot remain vital where there is nothing to extend beyond the original equipment of the extension specialists.

2. Where the extension service is organized wholly independently of the resident division in the same institution, with no organic relation other than that they are both parts of the same college, this condition would seem to find its explanation in one of four causes:

The first cause is the circumstance of origin. In a few cases it is undoubtedly true that the separation is due to the fact that the divisions were organized at separate times and under separate administrations. In the earlier years they may have done well separately. In the long pull, they will do better with an intimate relationship. The circumstance of independent origin is not of itself a valid reason for retaining organic separation.

A second cause, which has something to support it, is administrative convenience in having the specialists organized about the office of the director of extension, so that program making and field assignments may be more readily handled. However, I am firmly of the opinion that, in the long run, problems of administrative convenience will be less trying than those of the maintenance of professional standing. The unit of organization should be the subject matter, not the machinery for getting it out.

A third cause for the separation, which is sometimes continued where deliberate judgment dictates that it really should be otherwise, is fear on the part of the extension director and the extension specialists that the specialists will be so dominated by the resident staff or the head of the resident department that the extension service will actually suffer. There have been occasions for this fear. Such a situation is inimical to good extension work. The specialist must have, and should eagerly seek, the aid of the resident staff in planning her work and formulating subject matter. She lays herself open to real danger of error in teaching if she does not freely consult the resident workers in the same field. But if, in the interest of maintaining either superior position or harmony in subject matter, dictation is resorted to, the arrangement fails. A fundamental consideration is equality of recognition and standing, and the assumption of equivalent general capacities.

A fourth cause, which has perhaps had some bearing, is fear that the head of the resident division will desire to exercise the full power of selection of extension specialists without a sufficient appreciation of the particular qualities that make for success in extension teaching. It must not be overlooked, however, that selection by the director of extension alone is open to fully as great danger from the standpoint of technical qualifications. The only protection from danger on either hand is an arrangement that amounts to joint selection by the head of the department and the director of extension.

3. In the best organization, teaching, research, and extension in the given field of knowledge will all be organized at the same institution in a single department, and the teaching and research will have at least coördinate development with the extension; preferably greater development, so as to keep constantly ahead of the demands in practice. The resident department will be responsible for subject matter, the programs will be matters of joint conference, and the field assignments will be largely or entirely in the hands of the extension service, but always with full consultation with the specialists affected.

We must not omit another important reason for establishing the most intimate relations between resident and extension workers, namely, that the resident staff may know the viewpoint of the field and keep in touch with practical and public affairs, and that the specialist may always retain the viewpoint and the poise of the institution, careful as to facts and sensitive to the limitations of her function as a teacher, so as not to become a mere advocate of class or partisan views or be carried away by temporary moods or prejudices of those with whom she must constantly deal. Extension service everywhere has suffered from occasional, if not frequent, lapses from the standards that should always control educational workers.

Special provisions. The problem is not fully solved, however, when well-trained specialists have been engaged and have been established in an organization that provides the most intimate official relations with the resident teaching and research staffs. This condition obtains at some of our institutions and the situation is not thereby fully met. The pressing demands of the field operate to defeat the advantages which the organization contemplates unless conscious provision is made to promote frequent conference among the workers, to bring them into touch with whatever investigations may be in progress, and to allow periods for uninterrupted study and organization of new material. This conscious provision at the institutions takes many forms: individual conferences with the particular resident worker best able to give help on the problem in hand; stated weekly or monthly conferences, in which a definite aim is to discuss the problems that have arisen in extension, in resident teaching, and in research, and to review the latest acquisitions of knowledge; keeping specialists free from field assignments for certain days of the week or certain weeks in the month, or for longer periods, in the hope that they will find time to contemplate the recent contributions; granting temporary leaves of absence, with or without salary, for purposes of study or investigation; arrangements to carry a limited amount of teaching from time to time, or provision for the prosecution of limited projects in research which admit of intermittent attention; financing specialists to attend summer schools; encouraging specialists to register for advanced degrees; attaching specialists to departmental seminars; identification of specialists with scientific societies within the institution; preparation of material for specialists by the resident staff; special arrangements with members of the resident staff to test problems encountered by the field worker; and the granting of sabbatic leaves of absence, with salary, for professional and technical improvement.

The contribution of the specialist to resident teaching and research. It would be quite unfair to omit mention of the reverse aspect of the question, namely, the benefits that accrue to the resident teaching and research officers from their association with a good extension worker. The classroom and the scientific laboratory are the primary means of progress in many respects, but they are not always infallible, and in frequent cases they do not afford the check that is possible only by field trial under normal circumstances and under widely varying conditions. When a new method or practice is committed to the extension worker for demonstration and application, it is likely to come up against the final and severest test as to its soundness. The specialist thus makes important contributions both to knowledge and to practice.

The specialist, if she is observant, will frequently aid the station by discovering the need for experimental verification of much that has long been accepted in practice as the right thing to do. The specialist is at the most sensitive point of contact to discover practices that need verification, or problems that need illumination.

The specialist makes her contribution both to teaching and to research. Some of the most helpful things introduced into the resident courses are the result of suggestions brought in from the field, but the contributions to teaching methods are probably as great as, if not greater than, the contributions to subject matter. Resident teaching has usually proceeded from the abstract to the concrete; from the statement of the principle to its elucidation by details of practice. The extension teacher proceeds from the concrete to the fundamental facts that lie back of it; from the practice to the principles that explain and justify the practice. The classroom audience, largely inexperienced and therefore lacking an essential to ripe judgment, will remain and receive with apparent respect and usually without challenge what the teacher sets forth. The farm audience, whose equipment is chiefly experience, passes judgment, gives voice to challenges, and goes home if the teaching does not interest and convince. One specialist describes the extension method as more psychological than logical, and the resident method as the reverse. The extension method is and must be both. The teaching methods thus developed with mature but less-trained minds, have certain values for the classroom and the immature but more highly trained minds; and the resident teacher who has intimate contact with a good extension specialist, consciously or unconsciously is likely to modify her classroom procedure in some respects by the incorporation of methods which the specialist has set into her mind.

The future of the extension specialist. A phase of the question which will bear no overlooking is, what is to be the future of the extension specialist? It is too early to give an exact answer to this question, but the indications are strong that the trend will be steadily toward a demand for persons who have superior technical and scientific training and who will stand very close to the research in the field. There will always be need for a certain amount of elementary work in the extension field; but as farmers and farm women progress, as they are progressing, and as the vocational schools do their work under the Smith-Hughes Act, the requirements will become increasingly exacting. That institution is wise and forward-looking which is today seeking for appointment as extension specialists, persons not only with practical sense but also with advanced training or station experience or its equivalent, and with highly developed habits of study. The specialist of the future will be in a larger and truer sense a specialist, to aid and advise on the more difficult problems. She will be less a second-hand teacher. She will demand every opportunity and facility to keep abreast of progress in her field, and, if I mistake not, will require arrangements that will make possible her own independent examination and solution of some of the problems that arise in her work. This means either that she will be less exclusively an extension specialist, or that she will have much more time for personal improvement than the present arrangements afford.

In order to develop or to engage and hold the type of persons that will be increasingly needed as the work matures, there are demanded the fullest comradeship, equality of recognition, mutual respect, equal opportunities for study, and intimate, cordial association, between the extension specialists and the members of the resident staff.

OUR CAMPUS TEA ROOM

EDA LORD MURPHY

Iowa State College

We like to talk about our campus tea room because it is still comparatively new and because it has been developing slowly but surely. It is now firmly established and we hope that it will become more and more a college asset.

There was an insistent demand for a class in large quantity cookery, and in the fall of 1918 the first small class began preparing luncheons for about twenty faculty women, who were glad to be able to get a hot lunch so conveniently. In a very short time it was necessary to move into a larger room where forty could be served. Before many weeks passed, members of faculties of other divisions, both men and women, were asking to be allowed to come. We warned the men that the luncheons were rather "ladylike," but quite a number continue to be our loyal patrons.

From the very beginning we have prided ourselves on an interesting variety in our menus. We have never repeated one in toto. The complaints are in this wise, "Oh, enjoy this now for you may never have it again." It has taught patrons as well as students the infinite possibilities in ordinary foods. This has, no doubt, been easier because students rather than employees do the cooking. The charge for the luncheon is thirty-five cents. The following are typical menus:

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
Potato soup	Escalloped tomatoes	Creamed eggs on	Cheese and prune
Orange salad	French fried potatoes	toast	salad
Graham bread and butter	Caramel custard	Asparagus on lettuce,	Brown bread and
	Bread and butter	French dressing	butter
Date cakes	Tea or milk	Pineapple ice	Cherry shortcake and
Tea or milk		Sand tarts	cream
		Tea or milk	Iced cocoa

Occasionally, to break the monotony, we give a choice of two vegetables or an opportunity to order a French omelet or waffles! Ordinarily, the luncheon is table d'hôte and substitutions are not often asked. Since foods have become cheaper, we give the choice of milk or tea, and provide plenty of bread and butter. We plan to have very little meat because nearly all the faculty have dinner at night. We give them coffee as an occasional treat, especially when the making of doughnuts gives us a good excuse; ordinarily we serve only tea or milk.

The very name of Tea Room has grown to mean a place with "atmosphere" and with furnishings that are unique. Often these ideals have been more important than the quality of the food and service. We have aimed at an "atmosphere" of fresh air, restfulness, and genuine welcome; equipment and furnishings are only a means to the end of serving uniformly delicious foods in an attractive way.

The ten tables and forty chairs are black enamel, the china of the Old Haarlem pattern, the silver heavily plated and hammered. We use paper doilies and paper napkins. The centerpieces are glass finger bowls with two or three real flowers, usually calendulas because they fit our color scheme best, last well, and are comparatively cheap. The curtains, designed by students, are very decorative with a stunning pattern in gay appliqué on airplane linen. There is "One picture on each wall, not many things at all." The room has walls and ceiling of beaver board and the woodwork is common pine. These are finished with a soft gray stain which gives the quiet background so necessary where there are many people. The orange in the flower design on the curtains, with the touch of black in the stems of the tall hollyhocks, is repeated by the orange of the calendulas on the black tables, and is echoed, one might say, in the Jules Guérin prints. Two black-enameled serving tables and a desk for the cashier complete the dining-room furnishings.

In the laboratory we wanted high ovens and in order to obtain them we bought two gas ranges with ovens at opposite ends, rather than a larger range with one low oven. We placed them back to back and have plenty of burners and oven space too. The work tables have nickel legs and heavy oak tops. The vegetable sink proved to be of absorbent material which showed grease spots. The idea finally occurred to us to grease it all over and make it uniformly black. This with a thin coat of varnish makes an almost beautiful sink! The pan rack over the work table gives an "institutional" air to the kitchen as do the large aluminum and retinned steel cooking utensils. We have ample space for pantries and store room. In every way the equipment is conservative.

But even good equipment and good food will not make a tea room successful. The students are made to realize that business management, plus volume of trade, are essentials.

The method of book keeping is very simple and, as far as possible, is done by the students. The differences between a tea room such as

ours (not run for profit) and a real business are made clear. But principally, in this course, we emphasize menu making for various kinds of institutions, quantities for fifty, kitchen management and technique, standards of quality, cooking for profit, standardization of portions, and so on.

It early became apparent that the tea room ought to be used by more people than could possibly come for luncheon; so we opened it for the serving of afternoon tea, between 4 and 5 o'clock. At first we made the mistake of calling it the "Home Economics Tea Room," and limiting its use to seniors and faculty. It is now known as "The Campus Tea Room," and is open to all college people. Men, as well as women, enjoy the good sandwiches, and the delicious cakes and drinks. It is the custom now for committees to make plans over the teacups, for visitors to be told "not to fail to see the Tea Room," for groups of all kinds and descriptions to use it. Freshmen, sophomores, juniors, seniors, faculty men and women, young and old, have "discovered" the place and made use of it. We feel that we are paying the best kind of dividends on the money invested. As a matter of fact, it must carry itself financially, and it does.

The work in the afternoon is done by students paid at the rate of thirty-five cents an hour. It is directed by some one from the institutional classes and she is assisted by others. We never have any trouble even to get dish washers, and the whole staff have the greatest pride in the financial success of our enterprise.

It is far more than a place to obtain food. People say that it is restful; that after a cup of tea they can go back to work if necessary; that they are glad to have a place to meet and to entertain each other and guests; that those from other divisions feel much better acquainted with our division; that there is a gentle influence that is unconsciously regarded when students and faculty meet in this informal way. We like to think that these things are true and that while a comparatively small number are receiving training (the present class numbers twenty) a much larger number are receiving the benefits and pleasures of "The Campus Tea Room."

THE BASAL METABOLISM AND FOOD CONSUMPTION
OF UNDERWEIGHT COLLEGE WOMEN

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How prevalent is underweight among college women? Does the underweight college woman have a normal basal metabolism and does she consume enough food? It was to secure some light on these questions that the investigation described in this paper was undertaken. The points taken up are: first, the standards of weight for young women and the extent and harm of underweight; second, the effect of underweight on basal metabolism as seen in data already published and in our own observations on a group of underweight college women; and third, observations on the food consumption of this underweight group.

UNDERWEIGHT AMONG YOUNG WOMEN

Standards of Weight for Young Women. The commonly used standards of weight for adults are those gathered by life insurance companies by averaging the weights and heights of the individuals whom they accept for life insurance. Those for women are based on 136,504 policies, including 53,487 for women between 20 and 29 years of age. They were published (1) in 1912 in the Medico-Actuarial Mortality Investigation, Volume I, p. 66. The summary is here reproduced in Table I.

These figures are quoted, among others, in greater detail by Joslin in "A Diabetic Manual" and in less detail by Fisher and Fisk in "How to Live," and have become the standard for all comparisons. They differ slightly from those given by Mrs. Rose in "Feeding the Family," most of her weights being a pound or two lower. Unfortunately for scientific experiments, the figures are for women in indoor clothing, including shoes, rather than nude. The women students in our investigation were weighed nude and measured without shoes. The importance of this difference, however, is not so great as it would seem at first sight, particularly for computing the percentage of underweight. A difference of two inches in height in the insurance table corresponds usually to four pounds in weight; and two inches and four pounds are fair averages for heights of women's heels and weights of women's clothing. That is, the shift in the table is the same in making both corrections. In computing percentages of underweight, very little error is therefore introduced if the nude individuals and those from the life insurance tables are compared directly.

When the tables are used for persons over 30, the warning must be kept in mind that the average person tends to grow too fat with increasing years.

"We should endeavor to keep our weight at approximately the average weight for age 30, the period of full maturity, as experience shows that those so proportioned exhibit the most favorable mortality."

TABLE 1
Build—Women
Graded Average Weight

AGE GROUP	4 FT. 8 IN.	4 FT. 9 IN.	4 FT. 10 IN.	4 FT. 11 IN.	5 FT.	5 FT. 1 IN.	5 FT. 2 IN.	5 FT. 3 IN.	5 FT. 4 IN.
15-19	104	106	108	110	112	114	117	120	123
20-24	107	109	111	113	115	117	120	123	126
25-29	110	112	114	116	118	120	122	125	129
30-34	113	115	117	119	121	123	125	128	132
35-39	116	118	120	122	124	126	129	132	136
40-44	120	122	124	126	128	130	133	136	139
45-49	123	125	127	129	131	133	136	139	142
50-54	125	127	129	131	133	135	138	141	144

AGE GROUP	5 FT. 5 IN.	5 FT. 6 IN.	5 FT. 7 IN.	5 FT. 8 IN.	5 FT. 9 IN.	5 FT. 10 IN.	5 FT. 11 IN.	6 FT.
15-19	126	130	134	138	141	145	150	155
20-24	129	133	137	141	145	149	153	157
25-29	132	136	140	144	148	152	155	159
30-34	136	140	144	148	152	155	158	162
35-39	140	144	148	152	156	159	162	165
40-44	143	147	151	155	159	162	166	169
45-49	146	151	155	159	163	166	170	173
50-54	148	152	157	162	166	170	174	177

Prevalence and Effect of Underweight Among Young Women. There seems to be very little definite knowledge as to the prevalence of underweight among young women; extensive studies such as those made among school children are entirely lacking. That underweight is common is indicated by the fact that the physician to women in the University of Chicago reports that 150 out of 500 women entering the University in the autumn quarter, 1920, were 10 per cent or more underweight for their height.

Another striking example of the extent of underweight may be taken from the observations of Harris and Benedict (2) in "A Biometric Study of Basal Metabolism." They list studies made at the Nutrition Laboratory on 103 supposedly normal women, 66 of whom were under 30 years of age and therefore comparable with our young women. If the weights and heights of these 66 are compared with the life insurance table, it is found that 23 or two-fifths are 10 per cent or more underweight.

More is known about the harmfulness of underweight than about the extent. Insurance companies have long recognized that the underweight

young person is a poorer "risk" than the overweight one. Their figures showing this fact for young men are given in Table II which is quoted from the second volume of the Medico-Actuarial Investigation (1). They estimate that for certain ages there will be so many deaths per thousand young men insured. They call this number 100 per cent. They really find, as shown in the table, that there are many more deaths among the underweight young men than among the overweight. For example the deaths of the men 25 per cent underweight are 34 per cent more numerous than the average rate, and for young men 25 per cent overweight only 3 per cent more numerous. Or, to express the same thing in another way, a young man of average weight and one as much as 25 per cent overweight have about an equal chance of life; but one as little as 10 per cent underweight has 13 per cent more chances of dying. The report says similar figures have been found to be true for young women. These are rather surprising facts and indicate strongly that the underweight young person is not a well or a normal one.

TABLE II

Per cent of Actual to Expected Deaths According to Percentage Variation from Average Weight Men between the Ages of 20 and 29

AGE	- 30	- 25	- 20	- 15	- 10	- 5	Av.	+ 5	+ 10	+ 15	+ 20	+ 25	+ 30	+ 35
20-24	141	134	127	120	113	107	104	100	99	100	101	103	106	109
25-29	128	122	117	112	106	102	100	98	97	100	104	107	111	115

On the other hand, it must not be forgotten that overweight also has its dangers, especially, as emphasized by Joslin (3), that of diabetes, which is "largely a penalty of obesity, and the greater the obesity the more likely is nature to enforce it." It is the young person that is in danger from underweight and the middle aged to elderly person that is in danger from overweight.

General Characteristics of Underweight Young Women as Illustrated by our Subjects. Nineteen underweight young women served as subjects for the metabolism and diet observations given in this paper, ranging from 11 per cent to 26 per cent below the life insurance standards. The majority of them were obtained through the Physical Education Department of the University in the fall of 1920-21, by the coöperation of Florence McArtie to whom the underweight women students were at that time reporting, and to whom our appreciative thanks are due, as well as to the subjects themselves. Especially characteristic of almost all of the girls were nervousness, restlessness, and a more or less high-strung condition. Most of them tired easily and worried much about their work, and some alternated periods of intensity with periods of marked listlessness. On the whole they were distinctly below par in general appearance and behavior and did not seem like

normal, vigorous girls, though as the result of a physical examination of all but one, they had been pronounced normal except for their underweight. They were all rather serious-minded and sensible young women, and with one exception were not inclined toward many social events, thus eliminating the factor of the excess energy often demanded for such things.

Although most of them were not in the Home Economics Department, they were interested and were willing to cooperate. One of the writers became fairly well acquainted with them all and observed their habits and tendencies as much as possible. A few of the most striking individual characteristics are listed below.

- No. 1. Extremely restless, bad posture.
- No. 2. Aunt said "she's a live wire"—high strung, worries.
- No. 3. Rather languid, but ambitious, was gaining a little.
- No. 4. Very restless, although not energetic, always tired.
- No. 5. Studies hard, very energetic and restless.
- No. 6. Extremely nervous, excitable, always seems to be doing something new.
- No. 7. Highly excitable, looks very well, has red cheeks. Does a good deal of laboratory work.
- No. 8. Has had difficult time as freshman, her aunt said she could not be still even when asleep.
- No. 9. Has never gained weight since she had the flu, fairly restless.
- No. 10. Fidgets continually although she goes at things composedly, has lost some weight recently.
- No. 11. Good deal of laboratory work in chemistry.
- No. 12. Listless, says she usually does not feel well.
- No. 13. Unambitious, does not want to gain.
- No. 14. Too much study and worry, quiet and retiring disposition, has lost considerable weight.
- No. 15. Very nervous, tires easily, stays up too late.
- No. 16. Restless, much week-end frivolity and late hours, losing slightly.
- No. 17. Worried about work, late bed time, no appetite, losing weight.
- No. 18. Extremely high strung, too little fresh air, losing weight.
- No. 19. Very active and ambitious. Her friend said, "She's in for anything."

BASAL METABOLISM

One of the points about which we wished to secure information was whether the basal metabolism of such underweight young women as these 19 was normal or not. If it should be found high their underweight might be partially explained by their excessive food need to meet the extra metabolism; and if low they might be said to be living on an abnormally low nutritional plane.

Already Published Data on Basal Metabolism of Underweight Individuals. There is not a great deal in the literature to lead one to anticipate whether the basal metabolism of our students would be normal or not. Semi-starved individuals are reported as having distinctly low metabolism. For example, Lusk (4) quoting from Magnus-Levy, tells of a neurasthenic boy who practically starved himself before coming to the hospital, and while on his low

diet in an extremely emaciated condition with his weight at only 36.2 kilos, his basal metabolism per square meter was 33 per cent below normal. On a liberal diet with his weight at 38 kilos the heat production was still 17 per cent below; but ten weeks later with his weight increased to 52 kilos the metabolism had gone to 2 per cent above normal. "It is evident," says Lusk, "that the reduction of the weight of a man by 30 per cent may lead to a reduction in his requirement of energy by 44 per cent, a factor of conservation." Lusk in his recent paper on "The Physiological Effect of Undernutrition" (5) also discusses the experiences of the two physiologists Zuntz and Loewy who both suffered extremely from their much restricted food intake during the war. Loewy's weight decreased from 65 kilos in 1914 to 57 kilos in 1916, and his metabolism from 1429 calories to 1169 calories daily—a much greater percentage decrease in metabolism than in weight. Zuntz's experience was similar. For both, then, low dietary and emaciation resulted in a much decreased metabolism, a distinct slowing up of body functioning. They were of course losing nitrogen constantly from their bodies.¹

Interesting in this connection of semi-starvation is the study of Benedict and his associates (6) on the group of young college men who were put on a restricted diet for almost five months, their food intake being reduced practically one-third. In the first few weeks they lost on the average ten per cent of their body weight and then held this weight on the continued low food intake. They, too, showed a greater lowering of metabolism than of weight, their average heat production per kilo at the beginning being 25.2 calories and at the end 22.3 calories. Their metabolism, if compared with the Harris and Benedict standard, averaged 1.1 per cent above at the beginning and 14.6 per cent below at the end. Benedict particularly calls attention to the fact that these men were in continual negative nitrogen balance, averaging a total loss of 175 gms. nitrogen from their bodies during the five months. He suggests that since nitrogen compounds act as a stimulus to cellular activity, the loss of nitrogen from body tissue at least in part caused this lowering of the metabolism. It is interesting to find, from Benedict's comparison of the weights and heights of these young men at the time of their minimum weight with the life insurance standards, that only one was more than 10 per cent below. That is, they were not excessively thin, but they had lost much weight and had lowered their basal metabolism.

In all these cases it appears that extreme malnutrition, with low food intake and loss of nitrogen from the body, is the cause of the low metabolism rather than the low weight itself.

On the other hand, in contrast to these cases of extreme malnutrition with low metabolism, an ordinary thin person may show a higher metabolism per

¹ Toward the end of the war when Loewy's endogenous protein metabolism had become very extreme his metabolism went up again.

kilo than a very fat person, though not necessarily a higher metabolism per square meter of surface. The much quoted example, cited by Lusk (4), of the fat and thin brothers, aged 10 and 11 respectively, with 33 pounds difference in their weights is an illustration of this point. The metabolism per kilo of the thin boy was 17 per cent higher than his fat brother, but per square meter it was only 2 per cent lower. Similarly, and often to a greater extent, the metabolism of underweight children has been found (7) to be distinctly higher than that of normal ones. The adipose tissue of the fat person is not actively metabolizing and at the same time it possibly may serve to protect the body from loss of heat and so make a lower heat production satisfactory. With the thin person more of his body is metabolizing and he has less of a protecting layer, and therefore every kilo he possesses may have to produce heat faster to keep up the body temperature.

Is it to be expected that our underweight young women will resemble the war sufferers and Benedict's underfed young men with their low metabolism, or the underweight children with their high metabolism?

The group of 23 underweight young women already cited as occurring in the supposedly normal group discussed by Harris and Benedict (2) are nearest in character to our group of any so far mentioned. We have retabulated the data on these young women, presenting it in Table III in the order of their percentage underweight and comparing the metabolism of each one with the two commonly accepted standards of metabolism—Harris and Benedict's predictions (2) for women of their age, weight, and height, and the DuBois standard of 37 calories per square meter per hour for women between 18 and 30 years. Comparison with both of these standards shows an average metabolism for the group almost exactly normal—only 2 per cent or 3 per cent below. Four of the group are from 10 to 13 per cent below normal metabolism and one over 10 above. There is no close relation between per cent of underweight and of low metabolism.

These various cases therefore tend to show that the basal metabolism of the supposedly normal, underweight person may be practically normal; but that in cases where the food intake has become seriously restricted and the person has lost considerable weight the heat production has also decreased below the normal.

Observations on University of Chicago Students. In the experiments on our underweight young women the Benedict Portable Respiration apparatus (8, 9) was used to determine the basal metabolism. The procedure outlined by him was carefully followed. The subject came to the laboratory early in the morning, having taken no food since the night before, and rested quietly 30 minutes before any observation was taken. Duplicate 10 minute periods were always observed and unless they agreed within 5 per cent they were discarded and other observations taken or the day's readings discarded.

TABLE III
Metabolism of Underweight Women of the Nutrition Laboratory

NUMBER	AGE	HEIGHT	WEIGHT	UNDER WEIGHT	HEAT PRODUCTION PER DAY			HEAT PRODUCTION PER SQ. M. PER HR.	
					Observed	Benedict predicted	Difference	Observed	Difference from DuBois predicted, 37 cal.
		cm.	kilo	per cent	cal.	cal.	per cent	cal.	per cent
62	24	159	43.0	24	1158	1248	- 7.2	34.2	- 7.6
56	27	167	47.0	24	1168	1288	- 9.3	32.2	-12.9
90	22	157	41.3	23	1073	1238	-13.1	32.8	-11.4
88	26	159	44.2	22	1292	1251	3.2	38.3	3.5
58	25	159	45.0	21	1393	1262	10.3	40.4	9.2
60	29	159	44.9	21	1272	1242	2.2	37.1	0.3
57	22	164	46.7	20	1336	1302	2.6	37.1	0.3
64	19*	154	41.5	20	1207	1249	- 3.4	37.0	0.0
61	27	157	44.8	19	1189	1248	- 4.7	35.0	- 5.4
33	25	168	52.4	16	1321	1350	- 2.1	34.6	- 6.5
43	25	164	50.5	16	1327	1324	0.2	36.1	- 2.4
44	18	166	50.1	13	1235	1358	- 9.0	33.4	- 9.7
45	25	164	50.0	16	1345	1319	1.9	36.6	- 1.0
89	19	152	43.9	15	1143	1268	- 9.8	34.4	- 7.0
46	24	162	49.8	14	1419	1318	7.6	38.9	5.1
55	22	161	48.2	14	1294	1311	- 1.2	36.1	- 2.4
38	29	163	51.6	13	1421	1315	8.2	38.2	3.2
40	27	163	51.1	13	1265	1319	- 4.1	34.2	- 7.6
86	24	160	49.1	13	1153	1309	-11.9	32.2	-13.0
21	23	175	57.7	12	1430	1423	0.5	35.0	- 5.4
47	22	160	49.7	11	1139	1323	-13.9	31.6	-14.6
48	19	160	49.4	11	1300	1336	- 2.3	36.3	- 1.9
53	24	159	48.5	11	1480	1301	13.7	41.7	12.7
Average.....							- 1.81		- 3.24

* Harris and Benedict do not give standards for women under 21 years. The prediction for the young members in this group was computed by noting the decrease for women of their age and height between 21 and 22 years, and adding this amount to the prediction for 21 years. The difference is only about five calories per year at these ages.

Because of possible day-by-day variation in basal metabolism the subject was observed two days and the average of the two taken as the "observed" metabolism. The detailed results for the 17 subjects and comparisons with the two standards are given in Table IV. The age is that at the nearest birthday, the weight is taken without clothing, and the surface area is computed from the DuBois height-weight chart.

TABLE IV
Metabolism of Underweight College Women

NUMBER	AGE	HEIGHT	WEIGHT	UNDER WEIGHT	SURFACE AREA DUBOIS CHART	OXYGEN PER MINUTE	HEAT PRODUCTION				
							Per 24 hours			Per sq. m. per hr.	
							Observed	Benedict predicted	Difference	Observed	Difference from Dubois predicted 37 cal.
	yrs.	cm.	kg.	per cent	sq. m.	cc.	cal.	cal.	per cent	cal.	per cent
1	24	174	48.1	26	1.57	206 189 av. 197	1370	1390	- 1.4	37.2	0.6
2	21	167	46.0	24	1.49	166 171 av. 169	1175	1309	-10.2	32.2	-12.9
3	27	167	49.5	23	1.54	171 207 av. 189	1310	1317	- 0.5	35.7	- 3.5
4	19	167	47.3	22	1.51	204 197 av. 201	1400	1327	5.5	38.6	4.3
5	30	172	52.0	21	1.59	194 201 av. 197	1370	1330	3.7	35.9	- 3.0
6	25	167	49.0	21	1.55	No metabolism data					
7	20	165	47.3	20	1.50	185 172 av. 177	1230	1318	- 5.9	34.2	- 7.6
8	19	157	46.8	19	1.41	213 181 av. 197	1370	1309	4.8	40.5	9.4
9	22	158	44.7	19	1.42	No metabolism data					
10	28	164	49.7	19	1.59	179 184 av. 181	1250	1302	- 3.9	34.3	- 7.2

TABLE IV—Continued

NUMBER	AGE	HEIGHT	WEIGHT	UNDERWEIGHT	SURFACE AREA DUBOIS CHART	OXYGEN PER MINUTE	HEAT PRODUCTION				
							Per 24 hours			Per sq. m. per hr.	
							Observed	Benedict predicted	Difference	Observed	Difference from DuBois predicted 37 cal.
	yrs.	cm.	kg.	per cent	sq. m.	cc.	cal.	cal.	per cent	cal.	per cent
11	18	162	47.3	18	1.46	200 206 av. 203	1410	1220	15.5	40.3	8.9
12	30	161	50.0	15	1.52	No metabolism data					
13	25	156	45.9	15	1.42	177 160 av. 169	1175	1260	- 6.8	34.5	- 6.8
14	21	157	45.0	15	1.41	179 189 av. 184	1260	1272	- 0.9	37.6	1.6
15	21	167	52.0	14	1.57	199 199 av. 199	1380	1361	1.4	38.1	3.0
16	24	158	47.2	13	1.46	202 189 av. 194	1350	1292	4.5	38.4	3.8
17	28	171	57.2	12	1.65	174 173 av. 174	1200	1387	-13.4	33.3	-10.0
18	20	160	50.8	12	1.50	210 190 av. 200	1400	1343	4.3	38.0	2.7
19	19	162	51.7	11	1.51	166 169 av. 168	1160	1363	-14.9	32.1	-13.2
Average							- 1.3				- 1.9

The average metabolism of the group was found to be fairly close to the standards—only 1.3 per cent and 1.9 per cent below. Four of the subjects are higher than the Benedict predicted, three almost exactly the same, and nine below. Four are higher than the DuBois standard, two almost the same, and twelve lower. These differences from the predicted are too slight to be significant.

These two slight differences from standards are almost exactly the same as those found for the 23 underweight women of Benedict's study referred to above and are slightly less than those found by Blunt and Dye (10) from observations on seventeen women only one of whom was underweight.

There is no consistent relation in the writer's subjects between the per cent underweight and the difference from the predicted. Also with possibly one exception, No. 11, who was 15.5 per cent above the Benedict standard, there was no abnormally high metabolism which might indicate hyperthyroidism. This underweight group, therefore, showed in most cases an entirely normal basal metabolism.

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(To be concluded in the May issue.)

CURRENT HOME ECONOMICS RESEARCH IN AMERICAN COLLEGES AND UNIVERSITIES AND IN GOVERNMENT INSTITUTIONS

From the Research Committee of the American Home Economics Association

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Foreword. As it is manifestly impossible to publish in one installment a list covering all these institutions, the committee is reporting, for publication, titles in the order of their presentation. Additions to this list will appear in future installments. The committee therefore solicits reports from all home economics departments who have students doing graduate work on problems of importance to home economics, whether these studies are being carried on within the department itself, or in cooperation with some other department of the institution.

It is the desire of the committee to include in this list only those titles which represent work already completed, or sufficiently far advanced that there is every reason to suppose that the thesis will be completed by a given date. Studies made by faculty members or by professional research workers are also called for. In those cases where the study has been published, medium and date of publication should be given.

In case of certain institutions it is likely that not all of the papers properly classified as home economics research have been included. Additions to this list are solicited.

THE UNIVERSITY OF CALIFORNIA, 1915-1921

(All of these papers are Master's theses, except nos. 11 and 12.)

Department of Household Science

The Determination of the Conditions Governing the Absorption of Fats by Fried Foods.

Ella Louise Rau, 1916. (See Physical and Chemical Changes in Fats Used in Frying Food, Morgan and Ella Rau Cozens, *Jour. Home Econ.*, 11, 394, 1919.)

Relations of Certain Controlled Conditions to Time of Cooking and Loss of Nitrogenous Extractives in Roasting Beef. Precious Mabel Nelson, 1916.

A Comparison of the Oxalate Titration and Electrometric Methods for the Determination of the Development of Acidity in Milk. Margaret Hazel Mills, 1916.

A Study of Home Canning Methods and Their Effect on the Viability of Certain Anaerobes Found in Canned Foods. Carrie Ethel Castle, 1919. See *Jour. Home Econ.*, 11, 246, 1919.

Note: Mrs. Carrie Castle Dozier is continuing certain phases of this problem as part of the botulism investigations being carried on at the Hooper Foundation for Medical Research.

The Carbohydrate Content of Thrice Cooked Vegetables for the Diabetic. Pearl Pemberton, 1919.

Value of Whale Meat as Human Food. Edith L. Brown, 1918.

The Biological Value of Wheat and Almond Nitrogen. Alice M. Heinz, 1918. (See *Jour. Biol. Chem.*, vol. 37, Feb. 1919.)

The Extraction and Purification of One or More Proteins from California Almonds. Elizabeth Bridge, 1916.

Note: Further studies now under way: a, Van Slyke separation of amino-acids in a globulin and an albumin isolated from the almond. b, Nutrition studies with mice using these purified proteins as sole source of nitrogen.

The Relation of Blood Creatin-Creatinin to Arginin. Marguerite Johnson, 1919.

Isolation and Identification of Inulin from the Globe Artichoke. Ruth Okey and Anna W. Williams, 1920.

Metabolism of Women as Affected by the Menstrual Cycle. Ruth Okey and Maybelle Eager, 1920.

Studies on Vitamins, 1920 and 1921. Distribution of Fat-Soluble Vitamin between the Fat and Watery Phases of Milk, using Albino Mice. Studies upon vitamin content of dried fruits using same technique are under way.

Department of Household Art

Home Economics from the University Standpoint. Saides Ethel Stark, 1916.

An Elementary Course in Millinery. Florence Zander, 1920.

Studies in Stage Setting and Design for Costume. Dorothy Eurilla Wilkinson, 1921.

Egyptian Character in Stage Setting and Costume. Illustrated by Aida. Alice Robbins Humphrey, 1921.

THE UNIVERSITY OF MISSOURI, COLUMBIA

Hygiene of Underwear. Florence Caton.

Experiments in Cake Making. Nita Collier.

Temperature Inside the Jar During Canning. Louise Stanley and Ethel Gildenhaus.

The Thermal Death Point of *Bacillus Botulinus* in Canning Spinach. Louise Stanley, Ethel Gildenhaus, and Mrs. Abbott.

Effect of Blanching Before Canning on the Appearance, Keeping Quality, and Nutritive Value of Some Typical Vegetables. Louise Stanley and various students.

Effect of Baking Powder on the Specific Volume of Cake. Louise Stanley and Nita Collier.

The Influence of Cooking and Canning on the Vitamine Content of Foods. Louise Stanley and Bertha Whipple.

FLORIDA STATE COLLEGE FOR WOMEN, TALLAHASSEE

Studies in Nutrition and Experimental Cookery. Ella M. Woods and Juanita Darrah.

PURDUE UNIVERSITY, LAFAYETTE, IND.

Hitherto Unreported Experiments with Different Fats in the Making of Cakes and Pastry.

Hannah Osborne and Amy Bloye, under direction of Mary Mathews.

(To be continued)

FOR THE HOMEMAKER

MAKING A SUCCESS OUT OF FAMILY LIFE

"What is success and how are the great number of families living on the average income in this country to win it?" asks Mrs. Mary Hinman Abel in her new book, "Successful Family Life on the Moderate Income," and there follows a discussion of the problem from almost every viewpoint, which can hardly fail to help the "million and a half families in this country in 1910 with incomes of \$1400 to \$2000 a year, a sum that is equivalent in buying power to probably \$2500 to \$3500 more or less in 1921. . . . there should perhaps be added to (this group) many families with somewhat larger money incomes . . . all families, in fact, in which the financial margin above the minimum is only enough, when supplemented by the housewife's full time service, to secure some freedom in ordering the life."

One of the interesting things in the book is an outline of the "four conditions for success" which are as follows:

1. The money income of the family tolerably certain and earned wholly or chiefly by the man.
2. A fair start in life for the heads of this household, including wholesome home training, education, both general and vocational, and money enough, or things of money value, furnished chiefly from their own savings, to enable them to meet with courage the financial problems that present themselves, especially in the difficult early years of married life.
3. The right attitude of the woman of the family towards her part in its success, with a growing capacity to meet its requirements.
4. Generous help on the part of the community in promoting the success of the family.

What are the "higher values in family life?" Mrs. Abel in her chapter on this subject sums it up as follows:

The establishment of the family group will be influenced by the standard of living at any given time, and the plan of life which includes "family building" would seem to be the one which offers the best promise of permanence and success. No contribution to family life is so great as that offered by the

child, and all adults should have some relation to a home in which there are children. Adoption, either outright or partial, is the privilege of those to whom childhood makes a strong appeal, and is to be strongly recommended.

In regard to the "start in life," Mrs. Abel brings forth a rather new idea when she says that *the girl must save*.

Men, are more apt to take for granted than are women that they must work hard and save for the home they hope to have. It is, however, equally incumbent on the girl who is now entering all manner of occupations and demanding a man's pay. But in many cases she is still under the spell of a former time when she expected to be "supported" after she married, and she does not save as the man saves. The young woman, as well as the young man, while paying out of her earnings a fair share toward the home living expenses, should be able to start the collection of books, to buy her pictures or pieces of furniture, a rug, a musical instrument, and to begin a bank account, and she may feel that, whether she marries or not, a home with its cherished possessions, slowly accumulated and reflecting personal taste, will still be necessary to her happiness.

Should the woman have control over the family money? Mrs. Abel says:

Very early there should be a complete understanding between husband and wife as to income, property, debts, and financial plans for the future. Just as the man engages to provide the necessary funds, the wife should feel it her duty to study her work and make ready to carry her responsibilities.

They should make out together a plan of spending and there should be consultations over weekly or monthly bills with a view to improving the plan and noting whether theories are being carried out in practice.

The housewife should adopt a simple method of keeping accounts and she should enter her purchases daily. She must sum up and balance with tolerable exactness, but she should not worry over small sums that have been forgotten; it is better to enter them in the "unclassified" or sundry column.

She will study her weekly or monthly summaries with a view to improving the apportionments made and to examine into the wisdom of her purchases, and she must classify the most important outgoes, as for food for the family per week and month. Criticism of results is the important thing and it makes possible a better plan of spending for the year or years to come.

The housewife should have the actual command of money that has been agreed on as necessary to meet expenditures, either cash in weekly installments, or a joint bank account on which both she and her husband check, or, better still, a bank account in her own name, for the possession of the bank book adds to the dignity of her position and to her sense of responsibility.

Should a woman work outside the home after she is married? This is a important question and Mrs. Abel gives an exceedingly fair consideration of it in her chapter, "The Housewife's Contribution to the Family Income Through Housework." She says:

In comparing these two ways of money earning we are not concerned with which is the more honorable, that question belongs to a past-and-gone attitude toward labor; we are concerned simply with a comparison of values the woman who adds to the value of raw materials by making them into the finished product in her own home, as seen in the cooked food or the finished garment, or by renewing the service of articles as in washing dishes or cleaning, seems to have at present certain advantages over outside labor which is offering the same service:

1. Since the house exists and is conducted for the general purposes of family life, the housewife is not obliged to add to the price of what is manufactured in the home certain "overhead charges," which must be paid by business and added to the price of the finished product as sold.

2. The fact that what she produces in the home is consumed there, cuts out transportation charges, except those connected with the assembling of raw materials.

3. The time-factor, which on account of the high price of labor is the heaviest charge on outside business, is not, in the housewife's case, to be put at the same high figure, since part of her time is always necessary in her household for other than economic functions, and she "works in" to a certain extent her odds and ends of household arts. To make a complete comparison on this important point more facts are needed than we now possess.

4. There are many other economic factors to be taken into account, such as the superior efficiency of the home worker who is impelled by self-interest to improve methods and to use materials with economy, and who, on account of the variety and interest of her tasks, and the command over her time which enables her to plan periods of rest, can work longer hours without fatigue than can the woman in business.

5. There seem to be many non-economic reasons for retaining some of the household arts in the individual home, such as the control over healthful conditions requiring personal vigilance, the development it affords to the worker and the educational value of the household "plant" in the rearing of children. To make her necessary contribution to the family income by doing the work in her own home seems at present to be the only way by which the woman of small means can keep up her intimate relation with the family and perform her valuable non-economic functions.

These comparisons apply for the most part only to town and city life; in all rural communities, where nearly one-half of our population lives, indi-

vidual housekeeping must still be the rule and most of the household arts be performed at home. . . .

On higher income levels many factors enter into the decision, as the money rewards of the occupation, the interest and zeal that the woman has for her work, and chiefly the character of the work itself, as to whether it is easily combined with home life, leaving her enough time and energy for what society requires of her in that relation. The woman lawyer, physician, architect, writer, actress, and others of the more highly skilled and paid professional careers, will in many cases, continue their work or return to it after a time. Their high earnings will enable them to obtain the services of the few really qualified people who are available for housework and for the care and education of little children. Even in these cases it may be best for non-economic reasons for the woman to devote her whole time to the family if the earnings of the husband are sufficient for its support.

One would scarcely expect a book so definitely devoted to economics of the household to avoid discussion of the family budget. It is frankly considered in Chapter XIII, which begins by stating that "technically, the budget, whether of a nation or of a family, is concerned with dividing up the estimated income *before the money is spent*."

In regard to savings, Mrs. Abel calls attention to the fact that the Government budget suggests that the family of five receiving \$2400 income can save 11 per cent of it, or \$264. "This saving fund," she says, "may be assigned to many different uses." These, which include savings-bank deposits, life and accident insurance, buying of a house and furniture, and education, are discussed more or less in detail.

THE QUESTION BOX

Question: Does freezing, especially continued freezing, affect the vitamin content of canned food?

Answer: So far as we are aware, there are no published reports showing the effect of extremely low temperature on the antiscorbutic and antineuritic vitamin. Recent work indicates that vitamin destruction is the result of oxidation. Low temperatures alone, therefore, would produce no untoward effect on the vitamins of foods. Davey (*Bio. Chem. Jour.*, 1921, 15: 83) during an investigation dealing with the antiscorbutic vitamin, held citrus fruit juices for several months at minus 3°C. and minus 5°C., and observed that the potency of the antiscorbutic vitamin was in no way impaired.

EDITORIAL

Reasons for Membership in the American Home Economics Association. There are more than 10,000 home economics teachers in addition to the hundreds of extension workers and other home economics graduates in various allied fields. Of these workers about 1600 belong to the American Home Economics Association. We wish to secure for our chosen profession rightful recognition among professions and professional people. Such recognition comes only through support within the profession to the end of efficient organization and management. In so young a profession standards are set up and maintained by a strong association; in turn the Association needs the help of all progressive members in the formulation of constructive forward-looking policies.

The Association through its state organizations, state and national committees, and publications is a clearing house for information of value to home economics people; it is a means of contact between the teacher and the administrator, between workers in the same field in every section of the country; it furnishes a bond of sympathy between those who are already established and new members whose development will be followed with interest. To the home economics women in the commercial world the Association offers a medium for dissemination of information as to the contributions they can make to all other phases of the profession with the high standards they have set. This will secure for them the support and assistance of the profession. The homemaker should join the Association of the profession dealing directly with problems which have to do with home and community life. Only as we get the ideas of the homemaker who is in daily contact with these problems can the profession render its greatest service.

The Homemaker and the Homemaker's Department. At a recent alumnae gathering of home economics women in one of our large colleges one whole session was devoted to the discussion by homemakers of their problems. This is as it should be, and the JOURNAL pleads for similar discussion in its department for the homemaker. Workers in foods and nutrition contribute of their work; those whose interest is in textiles, institutional work, social service, or extension present results of their experience or study for the benefit of others similarly interested.

All of these subjects interest the homemaker and she is the person who puts into practice the findings of all other workers. Is it not time that she contributed her share of ideas for the improvement of living conditions in the home and the community? Hundreds of women trained in home economics are homemakers. Many problems come from the home; the solution should come from the home and the profession working together. Help to make this a department *for* the homemaker *by* the homemaker!

Obesity and Diet. Fat "cures" are quite the thing. If every popular magazine writer has not yet told the reading public how he got rid of his extra pounds, it is no doubt because he is still in the act of writing his story. Several of the city presses have been furnishing hilarity to their readers with daily accounts of weight reduction races by the over-fleshy. In some instances the city Health Departments have even directed these contests.

The amusing features of weight reduction are apparent but there is also serious reason for ridding oneself of excessive fat which probably does not occur to the layman. Life insurance statistics have long shown over-weight to be a liability and not an asset. A more tangible reason for keeping oneself reasonably lean, especially after middle age, is pointed out by Joslin.¹ Diabetes is the penalty for obesity; if there is any diabetic tendency whatever on the part of the individual, overweight is the only encouragement needed.

Nine hundred and ninety-nine of every one thousand fat people are overweight because they eat more food than they need and for no other reason. The other one case of obesity which may be caused by some functional disturbance is not being considered in this discussion. The person who thinks he eats so little and yet becomes or remains so fat may have an energy requirement much lower than he suspects. There are not yet methods of measuring energy expenditure in all the possible activities of a normal individual's day. Only the performances which can be confined within a small chamber are measurable. Therefore it is possible to miss the actual heat expenditure by several hundred calories when it is calculated or estimated from such meager data. If only one hundred extra calories of food over and above the amount used are consumed daily, it may mean an increase of body fat of almost ten pounds yearly.

¹ Joslin, E. P.: The prevention of diabetes mellitus. *Jour. Amer. Med. Assoc.*, 1921, 76: 79.

He who would reduce should first study food composition and food values. A reduction method can be effective only when it decreases food intake or increases energy output; if it does both at the same time it is all the more effective. However, going to extremes in indiscriminate dieting and fasting without medical supervision may have its dangers. Folin and Denis² found that acidosis developed to a noticeable extent in some very obese subjects after four to five days of fasting. By intermittent fasting they were able to increase the power of the body to burn its own fat without the appearance of beta-oxybutyric acid. Apparent failure of a dieting treatment, Grafe³ says, may be because of an undue retention of water by the body tissues even after considerable fat has been burned away.

The annoying thing about most reducing schemes is that they interfere with one's pleasurable habits of eating and living. The originator of one much advertised plan claims to have made the astounding discovery that food does not make fat! His followers, he avers, are allowed to eat. A lively sale of these lessons can safely be predicted though there is doubt whether the would-be reducer has spent his money wisely.

SYBIL WOODRUFF.

THE OPEN FORUM

To the Editor of the Journal of Home Economics:

The plea for a definite stand by the home economics profession on the question of uniformity in measuring apparatus and standards, voiced in the editorial appearing on page 614 of the December JOURNAL, interested me very much.

When a member of the home economics staff of the University of Washington at Seattle, I was perplexed with the inconsistencies in the measuring apparatus used in the food laboratories which had been under my observation up to that time. Early in 1917 I started inquiries to discover if this condition was quite general throughout the schools of the country. The investigation was carried far enough to show that apparatus was always inaccurate and there was a general lack of standardization and uniformity. More urgent matters interrupted a plan to gather concise data on the subject and present it to the JOURNAL with a plea

² Folin, O., and Denis, W.: On starvation and obesity with special reference to acidosis. *Jour. Biol. Chem.*, 1915, 21: 183.

³ Grafe, E.: Pathology and treatment of constitutional obesity. (Abstract). *Jour. Amer. Assoc.*, 1921, 76: 486.

to the home economics profession to foster the manufacture of accurate standard measuring apparatus, and influence its adoption in all home economics food laboratories.

There is probably no question in the mind of any one of us as to the status of the measuring cup in general use at this time. The following certificate, signed by the Chief Sealer of Weights and Measures of the State of Wisconsin, shows in detail the cubic centimeter capacities of seven cups representative of those used, in many cases indiscriminately, in home economics laboratories and homes throughout the country.

Household Measuring Cups

	ONE FOURTH	ONE-HALF	THREE-FOURTHS	FULL	ONE-THIRD	TWO-THIRDS
	cc.	cc.	cc.	cc.	cc.	cc.
Cup A*.....	55	125	193	277	75	173
Cup B.....	57	122	189	260	80	166
Cup C.....	53	112	170	245	73	148
Cup D.....	50	110	145	233	71	170
Cup E.....	67	127	187	240	97	167
Cup F.....	55	120	180	245	70	158
Cup G.....	65	120	180	240	83	158

(Signed) GEO. WARNER,
Chief Sealer of Weights and Measures.
 Madison, Wisconsin.

A and B, made of tin, have total capacities respectively of 40 cc. or 17 per cent and 23 cc. or 9 per cent in excess of the 237 cc. capacity of the standard U. S. one-half pint. C, of aluminum, and F, of glass, are 8 cc. or 3 per cent in excess of standard. The separate sections of these cups are irregularly inaccurate. D and E, of aluminum, and G, of glass, show the least tolerance; D, "Wearever" is 4 cc. or 2 per cent deficient, and E and G, 3 cc. or 1 per cent in excess of the standard capacity. (The tolerance for a graduate of the same internal diameter as G, allowed by the Wisconsin regulations effective after January 1, 1921, is about 1.6 cc. or 0.6 per cent.) The sections of D, however, are irregularly inaccurate; E has this same fault and is even less dependable because the total

*A. National Enameling Stamping Co., Milwaukee, Wis. (Tin.)

B. Not identified as yet. "Perfection" stamped on side.

C. West Bend Aluminum Co., West Bend, Wis.

D. The Aluminum Cooking Utensil Co., New Kensington, Pa.

E. Aluminum Goods Manufacturing Co., Manitowoc, Wis.

F. Indiana Glass Co., Dunkirk, Indiana. (Unfinished cup; no lip.)

G. Hocking Glass Co., Lancaster, Ohio. (Lip.)

capacity of the cup is not determined by the top edge. G, which is selling at retail for 10 cents and may be bought for \$7.20 per gross, less 10 per cent discount, is the least inaccurate as to section capacities. The lowest quarter division is 5 cc. or 8 per cent in excess as figured on the basis of the actual total capacity, and the second quarter is the same amount deficient; the lowest third is 3 cc. or 4 per cent in excess; the middle third, 5 cc. or 6 per cent deficient; and the upper third, 2 cc. or 2 per cent in excess of standard.

Since the inaccuracy of cups now obtainable on the market is a recognized fact, the first step to take toward the establishment of uniformity would be, presumably, to determine a suitable cup in regard to material and pattern and effect its manufacture in accordance with determined standards.

All graduated tin measures are barred from commercial usage by regulations of Federal law and laws of many states. It is almost impossible to fill the measure to exactly the same point each time and it is difficult to read such measures correctly. The same difficulties apply equally to enamel or aluminum graduated measures. The glass graduate can be easily and correctly read and is used exclusively for commercial purposes. Would it not seem advisable to consider a material which gives the greatest accuracy in use?

Glass is a poorer conductor of heat than is enamel, tin, or aluminum, and so the disadvantage of an overheated handle in the measurement of hot liquids is not experienced with a glass cup. Glass is easier to clean and retains its new appearance with less care unless actually chipped or broken.

It seems probable that accurate molds for glass cups can be made, for chemical and pharmaceutical glass graduates of tested accuracy are in common use. Evidently the price of such an article made of glass need not be prohibitive for general laboratory use, for the glass cup G, has as low a retail selling price as any on the market and is the least inaccurate of those tested. By using a chemical glass resistant to heat, the fragility of glass would be reduced to a minimum and that objection might be disregarded.

As to the pattern of the cup: shall it be made of a size similar to those now on the market with height and internal diameter approximately equal, or shall it tend toward the size specified by the Bureau of Standards, that is, with "the ratio of length of the graduated scale to the internal diameter not less than five to one?" Shall it have a pouring lip

or shall it not? These matters should be carefully considered and later be taken up with the designer and manufacturer.

Would it not be expedient for the JOURNAL to give the whole matter further publicity and through a committee supported by the American Home Economics Association consider the matter thoroughly and take it up with the proper commercial concerns? Later when a suitable cup is on the market at a reasonable price, it would be simple enough to gain its adoption and arrive at uniformity in this detail of scientific measurement, the neglect of which has given it undue importance.

Some correspondence has been appended.¹ The letters from the Corning Glass Works merit special attention. They have shown their interest in the matter and may be ready to make definite plans if approached by those in authority. The ready-made advertisement which would be given their ware would no doubt influence their decision.

I hope that this may give the pursuance of the project greater momentum.

KATHARINE MARTINDALE,
237 S. Tenth St., La Crosse, Wis.

A Student Cost of Living Study was made this year by graduate students in Household Economics at Teachers College, Columbia University, under the direction of Dr. Benjamin R. Andrews. This study, which is published in a forthcoming issue of the Teachers College Record, showed that the cost of living for 76 senior and graduate women students in Teachers College last year varied from \$741 to \$1995, with the median cost \$1243 to \$1251. One quarter of the group spent less than \$1121 and one quarter spent more than \$1444, so that one half of the group spent between these amounts. These totals include all expenses with the exception of railroad travel. The median costs for various items were as follows: fees paid to the college, \$295 to \$298; living expenses, \$511 to \$515 (room, board, laundry); clothing, \$231 to \$235; miscellaneous—all other expenses at college, \$200; railroad travel, \$82 to \$85.

Dr. Andrews is interested in securing similar costs from other institutions and will gladly send blanks showing the method of making the study to any who may be interested. Such a study is of value to the students and to the college in which it is made, since inquiries as to living costs are frequent from prospective students.

¹ Correspondence with cookery departments of various universities and with manufacturers of glass and aluminum cooking utensils.

BOOKS AND LITERATURE

Public Health Surveys. By MURRAY P. HORWOOD. New York: John Wiley and Sons, 1921, pp. 403. \$4.50.

This book is a valuable contribution to sanitary science. The clearness of expression and detailed treatment of problems confronting the public health surveyor, together with descriptions of what ideal conditions should be, make the volume especially useful to students in public health.

A pleasing foreword by the late Professor William T. Sedgwick and an introduction by Professor George C. Whipple of Harvard Engineering School, emphasize the importance and general principles of public health surveys.

The first four chapters contain general information about public health surveys and deal with fundamental problems of community organization and methods employed in making surveys. This is followed by six excellent chapters on problems of sanitation, with helpful discussions and illustrations. The subjects of school sanitation, school hygiene, organization and activities of the health department, hospital facilities, tuberculosis, vital statistics, and analysis of city budget are each discussed in separate chapters, but insufficient consideration is given to the control of communicable disease, infant hygiene, nursing, and public health laboratories. It is also felt that the subject of tuberculosis receives inadequate treatment for such an important problem. Instructive chapters dealing with the preparation of reports of public health surveys and methods of obtaining results from them, together with a discussion of the value of such surveys in the public health campaign, conclude the volume.

In so far as it deals with sanitation this book is excellent and should prove a useful guide in teaching what public health surveys are and how they are made and used.

IRA V. HISCOCK,
Yale University.

Make Your Own Hats. By GENE ALLEN MARTIN. New York and Boston: Houghton and Mifflin, 1921, pp. 111. \$1.50.

Every woman is vitally interested in being well dressed with a minimum expenditure of time, energy, and money. Of all parts of the wardrobe, the hat offers one of the greatest problems for a person with no training in millinery. Mrs. Martin has given in her book, an inspiration for anyone to try to solve this difficulty by learning to make her own hats.

The book contains a foreword which deals with the application of principles of costume design to hats, and several suggestions for the purchasing of ready-to-wear head gear. The subject matter of the main text covers practically all the construction problems which confront the beginner in millinery, and the directions are written in a very clear, definite style. The few illustrations which the book contains are carefully chosen and are easily understood. Many different methods of procedure from those of the average millinery textbook are advocated which seem sound and practical, and any person should be able to obtain good results if the directions are accurately followed.

Teachers of millinery will find this book a valuable addition to their reference libraries.

MARY C. WHITLOCK,
University of Illinois.

Personal Account Book of — Pupil, — School. By FRANCES R. KELLEY, Minneapolis Public Schools.

Miss Kelley has brought out a pupil's account book which will interest home economics teachers everywhere as providing a valuable teaching project. The book is put in the hands of the individual child for his or her personal expense and clothing record. It includes first a general account with columns for income from earnings and gifts, and columns for savings and for expenditures of various kinds. Savings is

properly put ahead of expenditures in the account form, as the only way to save is to save first. The expenditure classifications include food, clothes, education, pleasure, carfare, gifts and miscellaneous. One might suggest the desirability of including here "social welfare contributions" as a heading. The general account is followed by an appropriate monthly summary form. The last half of the book is a clothing account with items for ready-to-wear clothes and clothes made at home, for millinery, shoes, and miscellaneous. An appropriate summary is provided for the clothing account with a classification into underwear, indoor wear, outdoor wear, millinery, shoes and repairs, miscellaneous.

Miss Kelley is to be congratulated on this piece of work. Several cities are now requiring pupils in the upper grades and high schools to keep personal accounts as part of their work, and the requirement is a commendable one.

BENJAMIN R. ANDREWS.

Manufactured Gas and Natural Gas Situation in Pennsylvania represents a co-ordination, under the direction of Samuel S. Wyer, of Federal and State agencies, to spread accurate information and create a correct public opinion on the gas situation. Arrangements have been made whereby this pamphlet will be used in the Pennsylvania public schools. It is written from a resource viewpoint, directing existing facilities to the solution of a pressing present and future problem.

The Syracuse Home Bureau Food Calendar is a calendar by courtesy. It was prepared to meet the needs of the many women who are in touch with the Home Bureau and who expressed the desire for suggestions as to meal planning by the week. The first page contains a "Key to Meal Planning" with the ordinary foods divided in groups and with a brief discussion of each group. Menus for five weeks of cold weather and for five weeks of warm weather follow. These menus may be followed exactly, but they are given rather as examples of meals for a week planned with the food groups in mind.

Following the menus are about five hundred recipes under such headings as Fruits, Vegetables, Hot Breads, Yeast Breads. There are from ten to thirty recipes under the various headings and they are all tested Home Bureau recipes which will serve five persons.

In the estimation of those who use the calendar daily the hole punched at the bottom of each page which allows it to be fastened open at any place is a great advantage. No greasy finger marks on the pages of the Home Bureau Cook Book!

EDITH BARBER.

The Illinois Food Calendar which was prepared two years ago by Nina Crigler is still proving that it is a practical working basis for the busy housewife who would know whether or not she is planning a balanced diet for her family.

The particular value of this food calendar is its simplicity. The person who has not had technical training can use it successfully. The calendar has been very popular in connection with the establishment of the hot lunches in the rural schools. The children have been enthusiastic about keeping it, and the boys quite as interested as the girls. It has been used in nutrition classes to interest the children in bringing their weight up to normal, and has been of valuable assistance in carrying out the health project.

The calendar has also been used in launching the food selection project in connection with the home economics extension work. In one county where 440 food calendars were used in Home Bureau work, the home adviser has reported that 90 per cent of these women are giving more attention to meal planning. One of the outstanding results of checking the food calendar has been the increased use of vegetables and fruits, and a wider realization on the part of the women that milk as a food is comparable to meat in value and could take its place in a diet. They have been able to complete this phase of the work without becoming lost in a sea of scientific facts and new terminology.

KATHRYN G. VAN AKEN.

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NEWS FROM THE FIELD

THE "HOME ECONOMICS SPECIAL" TO CORVALLIS

Since the announcement, in the March JOURNAL, that the Home Economics Association is making arrangements for a special train, Chicago to Portland, a surprising amount of interest has been shown in the plan. The Special train can be made a decided asset to the Annual Meeting. The advantages are numerous.

1. The sleepers will not be overcrowded; the diner, club car, and observation car will be occupied only by our own party.

2. People gathering at centralized points can travel to Chicago or Minneapolis in special car parties. These cars can then be attached to the special train.

3. The days together on the "Home Economics Special" will give an opportunity for making and renewing acquaintances, for increased sociability and a genuine good time before the meeting begins.

4. The scenic attractions are unsurpassed in America. The route chosen is the "Burlington"—Chicago to Minneapolis; the "Great Northern"—Minneapolis to Portland. The Burlington between Chicago and St. Paul has been called "The Mississippi River Scenic Line." Beyond St. Paul, the Great Northern follows the west bank of the Mississippi through the picturesque section of the Lake Park Region of Minnesota, to St. Cloud. From Havre westward to the Rockies, there lie vast plains and cattle country. The crossing of the main ranges of the Rockies and their intermediate valleys includes mountains and river scenes of remarkable grandeur. Adjoining the big ranches of the cattle country is the Blackfeet Indian Reservation. To the west, lies Glacier National Park where a two-day stop-over has been arranged. Spokane is a short distance beyond Glacier Park. From this point, the line traverses the Wenatchee Valley, climbs the Cascade Range, and loops down the Pacific slope to Puget Sound, whose shoreline it follows to Seattle. It is an over-night ride down a beautiful valley near to the foot of Mt. Ranier, into Portland.

The schedule, Chicago to Portland, is as announced on page 152 of the March JOURNAL. The Portland business and civic organizations have planned an auto trip around Portland and up the highway, starting about 9:30 a.m. July 31. This day promises to be one of the most interesting and delightful features of our entire entertainment.

The cost of this trip from Chicago, including round trip railroad ticket, sleeper from Chicago to Portland, meals en route, and two days' side trip in Glacier Park, will be approximately \$150. The expense to be added on the return journey will depend largely upon the route selected and the length of the stay on the coast.

Complete details regarding returning routes, the cost of round trip tickets from the principal cities, as well as instructions for the purchase of tickets will appear in the May JOURNAL.

Address any questions to Nina Streeter, Chairman, Travel Committee, 1370 East 54th St., Chicago.

Reservations for accommodations during the Convention should be made with the Director of Dormitories, Oregon Agricultural College, Corvallis, Oregon, at as early a date as possible.

THE FARM HOME AND THE NATIONAL AGRICULTURAL CONFERENCE

Farm women and farm homes had a place in the great National Agricultural Conference called by President Harding January 23-27 at Washington.

The matter to be considered by the committee on rural population and the farm home was the part the farm home plays in the national policy, attention being directed to the farm

home as a living place, the farm standard of living, rural housing, and the wife's partnership in farming enterprises.

Out of 26 women from 21 states invited as official delegates, 18 accepted. The chairman of the committee on the farm home was Mrs. J. C. Ketcham, of Hastings, Michigan, who has served on important committees of the American Farm Bureau Federation and of the National Grange. The other women members of the Committee were: Mrs. Nellie E. Blakeman, of Oronoque, Conn., a member of the home economics committee of the National Grange; Neale S. Knowles, of Ames, Iowa, State Leader of extension work with farm women; Mrs. W. A. Mather, of Adams, N. Y., a member of the New York State Executive Committee, Home Bureau; Mrs. Charles W. Sewell, of Otterbein, Indiana, a leader of state movements for home betterment; Mrs. Carl Williams, of Oklahoma City, editor of an agricultural journal. The three men members were: Bradford Knapp, dean of the state agricultural college, Fayetteville, Ark.; George Martin, Editor of Farm and Fireside, New York City, and W. J. Thompson, South China, Maine, Master of the State Grange. Agnes Harris, Office of Extension Work, U. S. Dept. of Agr., acted as secretary of the committee.

Mrs. Ketcham and Mrs. Sewell presented the report of the committee to the main conference. The recommendations were as follows:

(1) Agricultural and economic conditions largely determine the standards of living in the farm home. Economic reforms along the lines of coöperative marketing and finance are readily translated into better homes. While working along economic lines every effort should be made to maintain good standards of home life and to stress those ideals of high type homes that shall give to rural life the satisfaction, attractiveness, dignity, and power to which it is justly entitled.

(2) Recognizing that the farm home is the heart, not only of American agriculture, but of the nation as well, we strongly urge that its power and influence be fully appreciated and used, through the appointment of farm women as well as farm men to official positions in farm organizations, and through the selection of farm women for service on important National and State boards. The equal representation of country and city homes will add to the dignity of country life and serve to bring about a better understanding between country, town, and city.

(3) We realize that the morale of the farm families must be kept up and that the first and most important means in accomplishing this is self-help. This should be supplemented by the enthusiasm which comes from united effort in community groups and organization, and the aid of the church, the school, the extension service, and all other forces effectively coöperating in an earnest endeavor to do worth while things as they come to hand, working toward ultimate relief through every means recommended by this conference.

(4) In view of the growing demand for educational assistance from the extension service of the State Agricultural College, because of an increase in the groups of farm families associated together for mutual help, no matter under what names, a greater number of public extension workers is needed, especially in the interest of the farm home. We subscribe cordially to the principle that all extension workers should be employed only with public funds and should serve with equal zeal all groups or organizations of people without distinction. Extension work should be a public educational service for rural people.

(5) Recognizing the excellent organized work that has been conducted by farm men and women in many communities, we strongly recommend that agricultural organizations emphasize in their definite programs a study of food, clothing, housing, child care, and higher life as related to the high standard home, which is our goal.

(6) In view of the fact that farm tenancy is seriously increasing and thereby endangering the stability of the farm home in some sections of the country we wish to encourage farm ownership.

(7) We desire to commend Congress and the President for the passage of the Maternity Act.

(8) We endorse the Home Economics Amendment to the Federal Vocational Educational Act.

(9) Assured that the future of Agriculture depends upon the training of farm boys and girls for farm home and community life, we recommend such training as a vital factor in development of leadership, community spirit, coöperative study, and the use of new and improved methods in agriculture and social life in the country. We urge that farm men and women take an active part in the organization and maintenance of some type of group work for boys and girls, that by this method the joys and dignity of agriculture as a profession can be developed as in no other way.

(10) We strongly recommend the conservation of the American farm home. It offers the best opportunity for the development of ideal family life in which the farmer and his wife are equal partners in work, social life, and business and in which the children have an opportunity to become junior partners in the management of the farm and home.

Other women who were delegates to the Agricultural Conference and the committees on which they served were as follows: Farm Population—Mrs. H. F. Chaffee, Amenia, North Dakota, Mrs. L. C. Chapple, Lykesland, South Carolina, Mrs. J. W. Jones, Olney, Maryland, Mrs. W. C. Martin, Dallas, Texas. Transportation—Mrs. Frank M. Black, Myersdale, Pennsylvania. Marketing of Farm Products—Mrs. Edward P. Costigan, Washington, D. C., Mary E. Pennington, New York City, Mrs. Russell Tyson, Chicago. National Forest Policy—Mrs. Maude Wood Park, Mrs. B. John Black, Roslyn, Maryland, Mrs. Albert Manning, Otisville, New York, Mrs. Thomas G. Winter, President Federation of Women's Clubs, Minneapolis.

ARIZONA

The University of Arizona. Adelaide Baylor, of the Federal Board for Vocational Education, recently visited the University of Arizona, to study the teacher training courses given at this institution in vocational homemaking.

The Foods and Nutrition Department is carrying on a series of rat feeding experiments to show the possibilities of such experiments in teaching nutrition classes and in home demonstration lectures.

Students in nutrition have organized a health class in one of the public schools of the city. They have the hearty cooperation of the city superintendent of schools, the principals, and the school nurses.

CALIFORNIA

California Home Economics Association. The perfection of our share in the regional plan for national organization has occupied the "leisure" of the State Council members.

A visit from Miss Weigley in November helped greatly to clarify our difficulties, and the president is happy to report that state affiliation under the regional plan is effected

with the forwarding of a check from the treasurer to the amount of \$171. This sum will be larger next year since units within the sections are organizing.

Home economics teachers everywhere are awakening to the tremendous value of organization. We now have a Bay Section, a Central Section, a Southern Section, and requests have come for assistance in organizing a Northern Section.

California has pledged \$680 in contributing and sustaining memberships toward the Executive Secretary Fund of the American Home Economics Association.

FLORIDA

Florida Home Economics Association. The Home Economics section of the Florida State Educational Meeting held its meeting on December 29th, with Lucy Cushman, State Supervisor of Home Economics, presiding. The program follows: How to Interest High School Girls in Home Economics, Adelaide Baylor, Agent for Home Economics Education, Federal Board for Vocational Education; Affiliation of the Florida Home Economics Association with

the American Home Economics Association, Harriette Layton, Assistant State Home Demonstration Agent; A Place for the Commercial Home Economics Workers in the National Home Economics Association, Mary Keown; Round Table discussion, led by Mrs. George Atkinson, Dean of Home Economics at Florida State College for Women.

ILLINOIS

The University of Chicago. Arrangements have already been made for a number of outside members of the faculty for the coming summer quarter, in addition to all the regular staff. Among others may be mentioned Pearl Ruby now assistant professor of home economics at Kansas Agricultural College, formerly in charge of the A. R. C. nutrition work in Wichita; Florence Williams, supervisor of industrial arts in Richmond, Ind., and one of the authors of the monograph, *Home Economics in American Schools*; and Regina Friant, formerly supervisor of vocational home economics in Missouri, now taking graduate work at the University.

Miss Ruby will teach elementary nutrition and dietaries and will work with Miss Roberts in the Child Health School; Miss Williams will give courses in costume design, and Miss Friant in methods of teaching food and nutrition and home management.

The Art Institute of Chicago has conducted, through its extension department, the Better Homes Institute in upward of 100 cities. The institute is an organized project for community welfare, and is under the direction of Ross Crane, head of the extension department, and Mrs. P. A. Spaulding, organization manager.

KANSAS

Farm and Home Week at Kansas State Agricultural College. The week of February 6 to 11 was Farm and Home Week, and the entire college plant was placed at the service of the visitors. Under the direction of Dr. Helen B. Thompson, Dean of the Division of Home Economics, a four-day

short course in home economics was given. Addresses and discussions covered a wide range of subjects of interest to women. Dr. Louise Stanley, University of Missouri, told of important legislative measures affecting the home. Prof. Louise Glanton reported on a survey of clothing purchasing habits in Kansas, and the students gave demonstrations on clothing selection and construction standards. Miss Crigler and Mrs. Sewall discussed the possibilities of home demonstration work. Miss Kneeland urged the use of budgeting—an account book for Kansas homes. Child health was not neglected; Miss Leazenby reported the work of the health center, and Miss Ruby the teaching of health to the school child. There were clothing exhibits, visits to the practice house, and talks and exhibits on house furnishing.

There was a special program for the Boys' and Girls' Club Department. The girls gave demonstrations and held contests. There were stunts, playlets, trips around the campus, and visits to the college farm. Plans for the coming year were formulated.

NEW ENGLAND

New England Home Economics Association. The February meeting of the New England Home Economics Association was given over to a discussion of better home furnishings, led by Royal B. Farnum, Principal Normal Art School, Boston. Antoinette Roof, president, was the presiding officer.

The association is offering a course of seven lectures on Mental Development and the Child Welfare Program, by Dr. Abraham Myerson and Dr. A. Warren Stearns of Tufts Medical School, and Prof. Walter Dearborn of the Graduate School of Education of Harvard University.

The Girls' League of the Brookline High School. This league was established last year. Every girl in the high school is considered a member of the league, and each year two members of the faculty are elected to serve as advisory members. At the beginning of this year the committee on advisors

chose sixty picked girls from the Junior and Senior classes. Each of these girls was given four new Freshman whom they were to interest in athletics, glee club, dramatics, honorary society, debating, and all organizations, and to whom they were to explain the rules of the school. This was a great help to the faculty especially at the beginning of the year when each teacher was given two girls on whom she could rely for all errands and messages. The committee on classroom affairs have taken it upon themselves to beautify the school building and to make the teachers' room attractive and they send letters and flowers to girls who are ill. Some discussion among the townspeople as to the dress and appearance of high school girls reacted in the following resolution submitted by the Executive Board of the Girls' League and signed by every girl in the school:

"The girls of Brookline High School should look, dress, and act like high school girls. Peter Pan dresses or any simple woolen dresses, gingham, shirt waists and skirts (with or without sweaters), or middies and skirts are most suitable for school wear. Georgette waists, or very thin waists of any material are not appropriate for school, nor are sweaters without waists worn by well-dressed, refined girls. Thin silk or fancy stockings are not suitable for morning wear. The girls should not indulge in the use of rouge or in the excessive use of powder. Arranging the hair in extreme styles is not appropriate for a girl of high school age."

"Bad taste in dress and appearance shown by even a few girls injures every other girl in the school. Let us be sure that we, as individuals, do nothing to cause adverse criticism of our school. The finer its reputation, the greater will be our pride as students and alumnae."

NEW YORK

The Home Economics Association of Greater New York. The feature of the program of the January meeting was an address by Mr. Hobart Upjohn, architect, who told of the modern self-help house.

His points were illustrated by pictures showing good and poor routing of kitchens, desirable arrangements of windows and doors, and proper placing of furniture. Although the kitchen was emphasized, general principles of step-saving in house planning were given.

New York Wholesale Grocers' Association. At the annual convention of the New York Wholesale Grocers' Association, in New York City, February 15th, May B. Van Arsdale gave an address on What the Public does not Know about Food Distribution. It is a significant recognition of the work of home economics that such organizations as the wholesale grocers, the canners, and the bakers are asking women in our field to talk frankly with them, telling what the women of the country want, and what can be done toward a better understanding between the housewife and the men who handle food for her.

Department of Public Welfare and the Health Exposition. The Department of Public Welfare of the City of New York maintains a number of important public hospitals and chronic institutions, including the Metropolitan Hospital, City Hospital, Home for the Aged and Infirm, and Central Neurological Hospital on Welfare Island; Kings County Hospital, Greenpoint Hospital, Cumberland Street Hospital, and Coney Island Hospital in the Borough of Brooklyn; Sea View Hospital on Staten Island; and the New York City Children's Hospital on Randall's Island.

The Health Exposition in the Grand Central Palace provided exhibits of interesting phases of the development in various branches of municipal departments pertaining to the well-being of the people in general and to the city charges in the various public institutions.

The exhibit contributed by Commissioner Bird S. Coler of the Department of Public Welfare specialized in three phases of its work: (1) The laboratory kitchen work done by dietitians and nurses. (2) Occupational therapy work of patients and inmates. (3) Equipment provided for nurses in training, together with the home and

school atmosphere of a nurse's life while at work or in training.

The laboratory was displayed in an open square, showing typical equipment of a small kitchen. This included a vegetable sink properly lighted, sufficiently deep, and fitted with draining baskets; a new type of dish washer which could be used for sterilizing tray dishes and small utensils; a food mixer with several attachments; the best quality of aluminum cooking utensils, exemplifying labor and food saving for the nurse and dietitian and comprising some of the new forms such as the narrow deep double boiler, the replaceable cold handle on sauce pots; an array of cutlery; suitable tray racks and tray carts with acceptable china and glassware; silver and trays for institutional use, showing ice cream shells used as vegetable dishes because of the lip for handling; celery trays which will carry two or three vegetables for special diets; and other articles such as the individual easily washable salt dish so necessary for sick room service, open sugar basins which can be used for other foods, marmites to keep food hot, proper jugs for cocoa and hot water, and glass and porcelain top tables.

The food shown illustrated the project method of teaching nurses cookery and diet, and typified diabetic and salt free diets, concentrated gruels, malnutrition dietaries, regimes for the overfed, food for the tubercular. A tray contained the materials used in the departmental hospitals for the prescription modification of infants' feedings, including certified milk and without provision for pasteurization or sterilization of the feedings.

The outlines of the course in cookery for students and attendants was explained. Special emphasis was given to the tentative outline under consideration by the American Dietetic Association. The hostesses in this part of the exhibit were thirty dietitians of the Department of Public Welfare.

Flanking the open square where the kitchen laboratory work was displayed, was an elaborate exhibit of occupational therapy.

The nursing department was centralized in a sample bedroom typifying the rooms

that the nurses occupy in the various homes for the nurses of the department. Treatment trays and other equipment were shown, and there was a large attendance of nurses ready and always willing to explain the courses in the training schools. The nurses and internes, at various times, gave entertainments, typifying the life of the professional nurse in a large public hospital.

NORTH DAKOTA

The University of North Dakota. North Dakota newspapers are printing testimonials to the popularity and public appreciation of the work in actual child care undertaken by the home economics department of the University. Baby Mary has finished her first year in the practice house. Each girl in the cottage has entire charge of her for 12 days at a time. Her food, mending, and laundry work are taken over by her manager.

This training is considered by the department as an important part of the course in home management. Probably no one aspect of the work has aroused more favorable comment than this practical demonstration of the functioning of home economics training.

OHIO

At East Technical High School, Cleveland a course called "The Home and Its Management" is being offered in the twelfth year by Carlotta C. Greer, Head of the H. E. Department. In this course special emphasis is placed upon buying for the home. This phase of household management is being carried out effectively by means of field trips. Instead of the occasional field trip, in which a number of stores are visited or a number of different articles are investigated at one time, an excursion to one department of a store (or possibly of two stores in the same vicinity) is made each week. For these excursions the usual laboratory period of ninety minutes is allowed. Usually but one article is investigated on each trip. In addition, the pupils taking this course have four 45-minute recitation periods per week. In this way, it is hoped that an effective

knowledge of the quality and value of equipment and furnishings for the home will be gained. The course with this particular emphasis has not been given for a long enough period of time to pronounce it a satisfactory plan; it promises success, however. In a district, such as that of East Technical High School, in which a large percentage of girls on leaving school or on graduating engage in some type of business occupation, specific training in buying for the home appears to be necessary.

Diet Standards of School Children.

In Akron, Ohio, it was found that, out of 1,011 children weighed and measured under the direction of school authorities, 58 per cent were underweight, nearly a fourth of these being more than 10 per cent underweight. After two months effort in teaching these children how to improve their diet, 67 per cent had made some gain. The home demonstration agent then met with the mothers to demonstrate the results and to explain how to plan meals. The proper number of hours sleep and other health habits, such as deep breathing and teeth brushing, were also emphasized.

The demonstration was followed by weekly conferences of the mothers with doctor, nurse, and home demonstration agent, at which the health record for the week was examined, the weekly weights taken, and additional instruction and advice given the parents. As a result almost every mother now reports intelligent interest on the part of the children.

SOUTH DAKOTA

The University of South Dakota. This year there has been a rapid development in the department of home economics at the University. Enrollment has increased in all courses, especially in the classes in clothing. Dress forms made by the students have been the center of attraction in the dressmaking classes.

A catering course adds to the attractiveness of the food department. This is an advanced food course offered as an elective, and consists in planning, preparing, and serv-

ing dinners and luncheons to a number of people. These are real "company" dinners given by faculty members or residents of the town who are desirous of entertaining their friends and who are willing to pay the department for providing them with expert caterers.

The practice house is another important feature this year. One of the professors consented to board at the house and the girls have the unusual experience of feeding a man.

As a result of the growth of the department, the Home Economics Club has grown also. All the work of the club is planned and carried on by the members.

The Department of Physiology and the Department of Home Economics at the University are cooperating in some experiments along dietary lines.

VERMONT

The University of Vermont. The home economics department, which was opened at the University 13 years ago with Professor Bertha M. Terrill, the present head of the department, as the organizer and only instructor for the first two years, has grown until it now numbers 90 major students of the course, who are candidates for the degree of bachelor of science in home economics, besides minor elective classes from the college of arts and sciences and students of the teacher-training class, who are required to take one year of home economics as a part of their two-year course.

There are now five members on the staff of the home economics faculty at the University, including Professor Bertha M. Terrill, head of the department, Professor Alice E. Blundell, Edna C. Whitcomb, Jessie M. Winchell, and Mary Shallenberger.

Next fall Howard Hall will be used as a practice house. The girls in the home economics department will determine the equipment and arrangement of kitchen and laundry, will plan the refinishing, redecorating, and furnishing throughout, under the guidance of the members of the department staff, who will live at Howard Hall.

WEST VIRGINIA

Farmer's Week at West Virginia University. The part of the program for the women included five classes which met several hours each morning. These classes were landscape gardening, poultry, short cuts in sewing, millinery, and menu planning. The afternoons were devoted to the business of Farm Women's Clubs and the Farm Bureau Federation. Mrs. McClung, retiring State President of Farm Women's Clubs, reported 96 clubs with total enrollment of 2075. There are seven new home central committees and four sub-committees, namely, schools, public health, law relating to and affecting women and children, and recreation. The Farm Women's Education or Loan Fund has on hand the sum of \$916 to be loaned to farm girls who cannot otherwise get an education. Poultry raising has been the most extensive work, seventy-five per cent of the poultry work of the state being done by women. Fifty-six demonstrations in poultry by farmers and farmers' wives produced a net profit of \$1500. More than 1000 demonstrations in sewing, interior decoration, household conveniences, and foods have been given by home demonstration agents.

At a tea given by the Home Economics Department the guests were divided into groups of fifteen with a home economics major as guide. The guides led their groups to each of the following stops: an exhibit prepared by the class in housewifery, where a student demonstrated the cleaning of silverware; the work of the class in textiles, where a student conducted a test for weighted silk; the work of the class in senior clothing, where six seniors appeared from behind a screen dressed in make-over problems and gave rhymes telling about them; the dietetics laboratory, where a senior student demonstrated menu-making by showing sample meals and substitutes; the apartment, where the freshman students served tea; the clothing laboratory, where a freshman demonstrated the making of button holes on the sewing machine.

WISCONSIN

Better Babies at West Allis, Wis. The new high school at West Allis has a Chase washable doll, complete layette, small wooden bed (made by the boys), tub, basin, towels, and other necessary equipment for a course on infant care. The home economics girls raised the money for this equipment by having a bazaar. At the beginning of each semester, the seventh grade girls are given a detailed demonstration on bathing a baby. This demonstration is prefaced by a discussion of the care of babies so that the girls feel that it is a privilege to care for them. Each girl is given a chance to bathe the doll baby. However, this work covers a semester's time so that it is never monotonous—instead, each time the baby is bathed the girls are delighted and the review is effective.

The infant care course correlates very nicely with sewing, since the sewing now consists of making infant clothes. The girls make such articles as dresses, flannel gertrudes, and flannel night dresses for the poor babies of our city. The garments are simply made with emphasis on flat seams and dainty, inexpensive trimmings. Besides bathing the baby and making a layette, the girls learn how to make a bed properly and why and how to register a baby's birth, and are prepared for the food work of the next semester which includes lessons on feeding infants. Girls in this grade are still very much interested in babies—in fact most of them actually do take care of babies. Soon after the seventh grade, the children that need the work most begin leaving school.

One of the greatest values from this work is the development of citizenship. The success of the whole course depends on the unselfishness of the girls. They are all eager to sew for themselves but there has been no time when they were not delighted to think that they were helping some unfortunate babies. There have been several cases where these little seventh grade girls showed foreign mothers in our community how to bathe their babies correctly. Does

this not connect the home and school in a vital manner?

NOTES

Elva Helen Clarke, a former teacher in the Omaha schools, has completed her work at the University of South Dakota and accepted a position in the food department at the University of Illinois.

Emma Conley is the new State Supervisor of Home Economics for New York. She was formerly State Supervisor of Home Economics for Wisconsin and during the past four years has been in charge of the Home Economics Extension Division, University of Wisconsin.

Professor Louise P. Glanton, Head of the Department of Clothing and Textiles, Kansas State Agricultural College, will spend the summer vacation in Europe investigating conditions in the textile industries. Miss Glanton will visit the Piedmont silk region of Italy and the linen producing sections of Ireland, near Belfast. She will also spend some time in Paris observing the work of costume designers and modistes.

Cora E. Gray, who resigned her position as Dean of Home Economics at Florida State College for Women, is studying at Columbia University. Mrs. George Atkinson was appointed as Miss Gray's successor.

Ava B. Milam, Dean of the School of Home Economics of the Oregon Agricultural College, has been granted a two years' leave of absence and will go to China to undertake the establishment of a department of home economics in Yenching College, the woman's division of the University of Peking. Camilla Mills, a graduate of the School of Home Economics of the Oregon Agricultural College, will accompany Miss Milam as her assistant. The first part of this leave Miss Milam will devote to a study of the home life of China. The second year she will organize the department of home economics and help in the plans and equipment of a small building suited to this work. At the end of Miss Milam's leave she expects to return to the Oregon Agricultural College.

Miss Mills will carry on the work in Peking. This project is financed by the Woman's Foreign Mission Board of the Methodist Episcopal Church and by Peking University which is a union college. During Miss Milam's absence from Oregon her work will be handled by an executive committee consisting of the present heads of home economics departments.

Lottie Milam, M.A., Teachers College, August, 1921, has been appointed as specialist in home management for Montana.

Gladys Smith has been recently appointed nutrition specialist on the Florida Home Demonstration Staff.

Dr. Helen B. Thompson, Dean of the Division of Home Economics, Kansas State Agricultural College, will give courses in nutrition and in home economics education in the summer session of the University of California.

Emma Winslow, who resigned from her position as Home Economics Specialist for the Charity Organization Society of New York, and Lecturer in Household Economics at Teachers College, Columbia University, to pursue graduate study for her doctor's degree in Economics and Sociology at the University of London, reports a very interesting year in the English capital. She is following courses with Professors Bowley, Hobhouse, Westermarck, Sydney Webb, and other scholars of international reputation. Miss Winslow is one of the first women with home economics training to go on for special advanced work in economics and sociology—a field in which leaders in home economics have long been hoping that persons of special preparation might appear.

The United States Civil Service Commission announces an open competitive examination for Junior in Home Economics April 18; for domestic science teachers in the Indian Service April 26, and June 7; for matron in the Indian Service May 3, and June 21.

Three Fellowships in Social-Economic Research are offered to women who wish thorough preparation for such work. The

fellowships carry a stipend of \$500 and clerical assistance, equipment, and traveling expenses necessary for the investigation.

Applications must be filed before May 1st. Address inquiries to the Department of Research, Women's Educational and Industrial Union, 264 Boylston Street, Boston 17, Mass.

The National League of Women Voters will hold its Third Annual Convention April 24-29. The League has called a Pan-American Conference of Women for April 20-29. Both conferences will be held in Baltimore, Maryland, with headquarters at the Belvedere Hotel. For further information address National League of Women Voters, 918 Munsey Bldg., Washington, D. C.

FOREIGN

Mrs. Norton's Work Popular in Constantinople. The New York office of the American College for Girls at Constantinople reports a letter dated December 30th from Dr. Mary Mills Patrick, President of the College, in which she says: "Mrs. Norton has made a large place for herself here, not only because of her ability in home economics, but also in her journalistic training. She has become well known in the city and has recently become Chairman of the Publication Committee of a prominent organization to promote friendliness among the nations of the Near East. Her influence as a dietitian in the domestic department is strong."

Miss M. E. Roberts, Technical College, George and Regent Streets, Sydney, Australia, is beginning cafeteria work in the College.

The Feeding of the Children in Austria is divided between the American Relief Administration and the American Friends' Service Committee. At the present time the largest part of the work of the American Relief Administration is being

done in Russia though there are still one or two of their stations in Poland, and only as far back as July they were feeding about 300,000 children in Austria.

The plan for the feeding of children in Austria was developed by Dr. Clemens von Pirquet, who was formerly at Johns Hopkins and who gave the Silliman lectures at Yale University in February. Dr. von Pirquet is the outstanding specialist on children's diseases in Vienna.

School for Servants. A visitor to Denmark would be very much interested in the schools intended for the training of servants. The School for Household Arts, Crown Princess Louise, has a two year course for 36 to 40 girls. The students are trained through a boarding house maintained by the school, in which the girls do the work. They pay a monthly tuition of 25 Crowns each and are on duty daily with the exception of one afternoon a week and every other Sunday. Fourteen days leave in the summer are also granted. A diploma is given at the end of the course.

Nutrition Work. In Germany the outstanding piece of work of interest to the home economics trained woman is the nutrition work carried on by the American Friends' Service Committee. In July there were about 1,000 stations in various parts of Germany feeding approximately 1,000,000 children daily. The food is intended as a supplementary meal containing 667 calories. No child is admitted who is not found by physical examination to be under-nourished. The Rohrer index is used.

Seven food stuffs, including flour, rice, sugar, condensed milk, cocoa, beans, and vegetable fat are used in the child feeding work. The menus are worked out by Frieda Burkle, a home economics woman from Boston. She has been requested to prepare for the Journal an article describing her work.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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MASS CHILD FEEDING IN GERMANY

FRIEDA M. BURKLE

American Friends Service Committee, Berlin

During the war the food supply in Germany had grown less and less. By 1917, the allowance for a grown person amounted approximately to 1100 calories a day. Starling, in the "Feeding of Nations" gives 3400 calories as the net requirement for an average man, and 2400 for the average woman. In many instances the government ration was supplemented by "schleichhandel" or smuggled food. The rank and file, however, could not make use of schleichhandel indefinitely, owing to the cost of the illegal food and the dangers involved in getting it. Anaemia, rickets, tuberculosis, and other manifestations of undernourishment had grown to such proportions in 1919 that immediate help was needed. Mr. Hoover asked the American Friends to organize mass feeding in Germany, and gave food and funds sufficient to carry on such program until the harvest of 1920. It was possible to continue and extend the work after this period by voluntary contributions from America, by food allocations and money from the American Relief Administration, from the European Children's Fund, and the German government.

The food is similar to that used by the American Relief Administration for mass child feeding in other countries and is purchased in America. It is concentrated, transportable, durable material, such as lard, cocoa, evaporated milk, rice, beans, peas, sugar, and wheat flour. Since October, 1920, the German government has provided the sugar and flour. Lard has been replaced by vegetable fat, and peas have been omitted from the ration. The amount of food for a day's ration is based on the food value of a liter of milk. School children from 6 to 14 years of age receive 100 per cent or 667 calories;¹ expectant and nursing mothers and also apprentices up to 18 years of age, 120 per cent or 800 calories; and

¹For the winter of 1921-1922 the ration is 590 calories.

children below school age, 60 per cent or 400 calories. The food is given in the form of bread and soup. The quantity of soup has gradually been reduced to $\frac{1}{2}$ liter in order to restore to normal capacity the children's digestive organs, which had been distended by poor food.

In order that the meal should serve as a supplement to the home food and not as a substitute for it, we have found that the most satisfactory time for the feeding is between 9.30 and 10.30 a.m. Such an hour does not interfere with the main meals of the day; the attendance is more regular; the actual gain in weight and height has been greater where it has been possible to put the feeding at this hour. Where this could not be done, we have recommended 4 p.m. though this hour has drawbacks in the winter days when it begins to grow dark soon after 3.30 or if, after being dismissed from school, the children need to return again for the feeding. No food is taken home. To prevent food from being left over, owing to absences which average 3 to 5 per cent a day, from 3 to 5 per cent more children than the allotment are admitted. On one occasion when we visited one of the feeding centers we saw a child almost disappearing head downward into one of the 50 liter thermos kettles. When the little head reappeared above the brim, we asked the child why she was scraping out the kettle so vigorously. She answered: "I am the official lickier. The doctor said I must have Quaker food, too, but there was no room for me, so I am allowed to come every day to lick out the cans."

A cook book especially compiled for the use of the 7 food materials of the ration is in all kitchens. The menus are arranged to meet the needs of small kitchens, semi-large kitchens, and large central kitchens. Those in which 50 to 500 portions are prepared daily can have greater variety than those in which 20,000 to 35,000 portions are prepared. Semi-large kitchens, in which coal or gas is available in addition to the steam kettles, can vary the menu. By substitute recipes the menus are adjusted to meet the differences in taste and method of cooking in various sections of the country. The following menus illustrate those in cook book IIIa for the use of ration IIIa in large central kitchens:

Allowance

	Vegetable fat	Cocoa	Sugar	Evap- orated milk	Rice	Flour	Beans
Weekly food in grams...	65	18	130	227	112	405	85
Calories.....	575	80	507	386	370	1357	271

Menus and recipes

DAY	MENU	MATERIAL	GRAMS PER PORTION	CALORIES	TOTAL CALORIES
Monday.....	Cocoa	cocoa	9.0	350	594
		sugar	40.0		
		milk	61.0		
		flour	15.0		
		salt	1.0		
	with rolls	fat	6.0	224	
		sugar	6.0		
		flour	50.0		
		salt	0.6		
		onions	5.0		
Tuesday.....	Vegetable Rice	fat	15.0	318	562
		rice	56.0		
		salt	3.5		
		fat	6.0		
		sugar	6.0		
	with rolls	flour	50.0	244	
		salt	0.6		
		fat	9.0		
		milk	50.0		
		flour	65.0		
Wednesday.....	Milk Soup	salt	3.5	388	627
		fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6		
	with rolls	sugar	14.0	244	
		milk	55.0		
		rice	56.0		
		salt	2.5		
		fat	6.0		
Thursday.....	Same as Monday	sugar	6.0	333	577
		milk	50.0		
		flour	50.0		
		salt	0.6		
		fat	5.0		
	Bean soup	flour	10.0	244	
		beans	85.0		
		salt	4.5		
		fat	6.0		
		sugar	6.0		
Friday.....	with rolls	flour	50.0	348	592
		salt	0.6		
		fat	6.0		
		sugar	6.0		
		flour	50.0		
Saturday.....	with rolls	salt	0.6	244	
		fat	6.0		
		sugar	6.0		
		flour	50.0		
		salt	0.6		
Total.....					3546

The mothers and children are examined for the feeding by physicians, according to regulations formulated by leading German child specialists. All school children are weighed, measured, and grouped in three classes according to their state of nourishment. Those in class I are normal, class II need help but are not yet in danger, and those in class III are seriously undernourished. The children selected for the feeding come from class III, regardless of their families' social, religious, or political status. Experience has taught us that at least three months of uninterrupted feeding are necessary to obtain any lasting recovery from serious undernourishment and even then comparatively few cases can be dropped at the end of the first three months.

To meet local problems efficiently and to understand the conditions in different parts of the country, Germany was divided into 9 administrative districts with one or more American leaders in each. These leaders, all volunteer workers, organized German committees who carry out the actual work and are responsible for all details of the feeding. They visit the cities, kitchens, and feeding centers from time to time to get in touch with the workers and children, and to see that the work is being carried out satisfactorily. A system of reports accounts for the food from the time it enters Germany until it is eaten; weekly records are kept of the number of mothers, apprentices, school children, and children below school age. The reports are sent from every community to the district office which in turn reports to headquarters in Berlin.

District I comprises the industrial territory of the Rhine and Ruhr. It is a densely populated mining section, part of which is at present occupied by Belgian and French troops. The office is in the city of Essen.

District II is territory occupied by the English and the feeding is carried on by the English Friends. The office is at Cologne.

District III is the great export center of Germany and includes the seaport cities of Hamburg, Luebeck, and Bremen. The office and shipping department from which the food is transported to all parts of Germany is at Hamburg.

District IV includes part of Prussia and the Prussian provinces; it stretches to the Polish corridor and beyond to the territory of East Prussia. The central administrative offices and the district office are located in Berlin.

District V has its headquarters at Weimar, and includes Thuringia and part of Saxony. In this section toys, porcelain and optical goods are made.

District VI has its office at Frankfurt and includes the middle and southern sections of Germany, and French occupied territory in the Saar-Valley, Pfalz, and along the Rhine. It is the main center of the dyeing industry. Oppau, the scene of the chemical disaster, is located in this district.

District VII with headquarters in Dresden is the great home industry section. Cluny lace and five-sixths of the toys of the world are made here.

District VIII with headquarters at Breslau includes Silesia which is also a great industrial center.

District IX with headquarters at Munich is the agricultural section of south Germany.

No attempt was made during the first feeding period to reach cities of less than 50,000. Since then feeding has spread throughout the land into all places, where, according to statistics, the insufficient food supply had increased disease and mortality to such an extent that the health of the children of the whole community was in danger. By June, 1921, 1,010,000 mothers and children were being fed every day in 1640 cities, towns, and villages. The cooking was prepared in 2271 kitchens and served in 8364 feeding centers. At this time the highest point in the feeding figures was reached. The average number fed during the year, from October, 1920, to the harvest of 1921, was 700,000, the low point being reached during the holidays when the feeding was carried on only in institutions. The \$3,000,000 campaign conducted in America by Americans of German birth has assured the feeding of 500,000 until the harvest of 1922.

The question in the mind of the reader will probably be: "Why is further relief necessary, when so much has already been done?" Could you look into the homes, or observe the crowds going to work in the morning or returning in the evening, or see people purchasing food at the markets, you would get an idea of the low standard of nutrition and living. Recently I saw in one of the residential sections of Berlin a line of women of the middle class, corresponding in America to wives of professors or small business men, purchasing potato parings for food. Foreigners who see only the surface of life here, who come to buy articles of luxury or food and clothing because the depreciated mark makes them cheaper than in their own countries, do not see what is happening; they do not grasp the struggle to cope with the depreciating currency, the increase in the cost of living and the inadequate wages.

People whose income has not increased since 1914, and there are many such especially among professors, teachers, and widows whose only source of income is a pension, are living chiefly on a carbohydrate diet. Food which we have grown to consider an essential part of a well balanced diet is beyond their means. To them milk at 3.45 marks a liter,² if it could be had, is prohibitive. Such prices as 36 marks a pound for butter, 28 marks a pound for margarine, 12 marks a pound for beef, 10 marks a pound for fish, limit the diet to potatoes, oatmeal, flour, soup, and bread, with "wurst," herring, or cheese for protein.

The German government, realizing that further help for under-nourished children will be needed for several years, is incorporating

² At present, January, 1922, a liter of milk in Berlin costs 6.20 marks.

the feeding of needy children as part of its social welfare work. The Friends are leaving Germany because of the greater need in Russia; some American members, however, will remain in Germany as long as there are funds for the distribution of which the Friends are responsible.

The German people have shown their appreciation of this help in a time of need. It had a deeper meaning to them than the gaining of weight and height, or relieving tense white faces of strain, or making crooked little legs more sturdy. Something greater than gratitude has found its way into the hearts of the little children. If they are given an opportunity to develop the spirit which was expressed by the little girl in Upper Silesia who said, "I hope you are feeding the hungry Polish children too," Europe may yet find that good will among neighbors is possible.

RECENT DEVELOPMENTS IN THE SCOURING AND BLEACHING OF COTTON

A REVIEW OF THE LITERATURE FOR THE YEARS 1920 AND 1921

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Scouring. The first process in the bleaching of cotton is the boiling out or scouring. The fatty and waxy coating of the cotton fiber is water repellent and must be removed before either bleaching or dyeing, or "spotty" goods will be the result, due to uneven absorption. The impurities amount to from four to five per cent of the weight of the cotton and are pectin bodies, wax, oil, albuminous matter, and mineral substances. Scouring is usually done in at least two boils. The first is either a lime boil using milk of lime, or soda ash with or without resin soap; intermediate is an acid bath or "sour," and a soda boil follows.

Alkalies do not affect cotton unless of a concentration sufficient to cause a mercerizing effect. This will not take place in the boil liquors unless the solution becomes concentrated by evaporation or a new solution is added to the stock liquor after the material is in the kier and a concentrated solution thus comes directly in contact with some of the material. In case hard water is used, magnesium and calcium salts are formed which cause a harshness in the textile and perhaps some loss in strength. It is claimed that soft water will

remove 23 per cent more of the fatty matters than will hard water in the same process. No harm to the goods can be detected if the ordinary precautions are taken, especially the exclusion of air or any oxidizing agent. Air will cause the formation of so-called oxy-cellulose, resulting in a weakened condition of the fiber and a greater absorptive power for dyes in the spots so affected. To reduce the oxidizing effect in the kier various substances have been recommended such as sodium sulfite, which has been used with good results on strength. When air is excluded the pressure and temperature can be run higher, thus shortening the time.

So-called "fat lime" has a small amount of magnesia and silica in it. It should be run through a sieve so that no large particles will come in contact with the material, as these will burn the cotton. "Chemical lime" which is much advocated, is in powder form and, though it is more expensive, there are no large lumps to settle on the goods.

The lime boil takes from eight to ten hours, depending on the pressure and temperature used. The liquor must be run off quickly and the washing done rapidly and thoroughly or the lime will dry on the goods. The fats and greases are decomposed and insoluble lime soaps are formed, which are subsequently removed in the acid sours. Some of the new kiers supply an outside circulation of the liquor. Efficient circulation shortens the time of boiling and gives more even results.

Warp threads are sized, usually with starch, to prevent roughening-up in the weaving into cloth. This starch has to be removed for the same reasons and by the same means as the other impurities. A simple and very neat method of removing starch and gummy and pectin substances, is the employment of an enzyme, a diastase product, to render starch soluble. This method is used in laundries and in various industrial processes. From two to four per cent malt extract solution and a steep over night at 120°F. render the starch soluble; raising the temperature to 180°F. stops the digestive action of the enzyme. The determination of the Lintner value has been the test used for the power of the extract, but the Lintner value does not give the liquefying power of the extract, and this is what the bleacher needs to know. This knowledge can best be obtained from trial strips of goods in test solutions. Malt extract gives an easily soluble reagent, immediately ready for use, with rapid solvent action, and no harmful effect on the fiber or on dyes; and the use of it decreases the severity of the alkali boil.

If colored yarns are present in the material to be boiled out and bleached, certain modifications in the processes are necessary. Soda ash is safer and fairly effective when used in place of caustic soda. Sometimes a mixture of a small amount of caustic soda with a larger amount of soda ash is used satisfactorily. Matthews gives a table of the dyes in ordinary use and their fastness to boiling out and bleaching. It is sometimes necessary to limit or even

entirely omit the alkali boil, using soap scouring instead. It is claimed that the use of oxidizing agents such as sodium peroxide, potassium dichromate, potassium permanganate or perborate have advantages in counteracting the reducing action of the warp sizing materials on dyed cottons. These are not in use commercially, hence are probably not very successful. There is an exception, in that, when some bleaching is required in one operation with the boil, peroxide is used.

To the uninitiated, soap would appear to be the recognized scouring agent, but soap is more expensive and is only substituted for the alkali when the regular process is modified for some reason. The principal value of soap is for use with hard water, where insoluble soaps would be precipitated on the addition of alkali. Turkey-red oil and acid soaps are used to form more stable emulsions to prevent precipitation with hard water. Soap is not now used as it was formerly, largely on account of cost, but also because it may leave some yellow color if heated at too high a temperature.

The use of volatile solvents for the extraction of fat, wax, and oil has been advocated but such extraction does not entirely take the place of the alkali scouring. From some standpoints it would be an ideal method; for one reason there could be no possible deleterious effect on the fiber. However, the necessity of some alkali treatment, the cost of special plant and treatment, danger of fire with certain solvents, and the fact that the advantages do not seem to be commensurate with the extra cost and trouble make it doubtful if this method will be generally adopted. Solvent extraction has been successfully used where cotton and linen are to be finished with a high linen finish and where dyed materials are to be scoured.

After the lime boil and a cold rinsing the goods are treated with an acid bath called the "gray sour," or "lime sour," to remove lime compounds. Hydrochloric acid is preferable since the reaction with lime soaps gives soluble chlorides, whereas sulfuric acid yields more insoluble sulfates. This is usually done in the cold, though warming will decrease the amount of acid and save time.

A second boil, in case this boil is included, is in soda ash or a mixture of the soda with caustic soda. The use of pressure reduces the time of boiling from one-half to one-third. Resin soap is not so generally included here as was formerly the custom. Resin forms insoluble resinates with calcium and magnesium of hard water and even when distilled water is used the resin substances are hard to remove from the material. If resin soap is used there is a second soda ash boil and another washing.

The caustic soda boil, the liquor of which is usually from two to five per cent in strength, is shorter and less complicated than the above. If properly done the goods will show an increase in breaking strength, probably largely because of shrinkage. Oils are used with caustic because of their solvent action on

the cotton wax and the lime soaps which may have adhered to the fabric. The boil-out is quicker and the fiber has a soft feel, whereas the use of caustic alone leaves a harsh feel.

In 1918 Knecht and Hall did some work on the composition of the residual liquors from the alkaline boils, determining where the various impurities were removed. Much remains to be done on the composition of these liquors to establish possibilities of their further use or recovery.

Chemists are not agreed as to the advantages of using a lime boil nor on the number of soda boils. Darling and others claim one lime boil with one soda ash boil to be sufficient. Julius gives a method for the use of a single boil in a mixture of soda ash and caustic by previous use of enzyme, but does not recommend this shorter method when a good bleach is desired. The original use of the various boils was largely empirical but chemists have not materially altered the old processes.

Bleachers have considered it more difficult to obtain a uniform composition in commercial lime than in soda ash or caustic, and some of the discouragement of the use of the lime boil has come from that source. It has been claimed that lime sometimes contains sufficient iron to leave stains on the goods. Darling investigated lime of different grades, determined the amount of iron present and the amount necessary to cause trouble, and made recommendations as to specifications in purchasing. He has concluded that the amount of iron present is harmless and that iron from poorly lined kiers is much more dangerous than the iron contained in the lime. The lime boil still appears to be the best method of removing the waxes and pectin matters.

In order to save time, or, in the bleaching of colored fabrics as striped goods, where scouring may prove more detrimental to the dyes than the bleaching proper, the boiling-out may be much modified or practically omitted. Colored goods may be treated with diastofor (or other enzyme preparation), washed in hot water or in hot dilute soap liquor which may or may not have soda ash in it, and bleached. In case indigo is present in the colored goods the reducing action of the dressing materials may cause loss of color and the enzyme treatment will remove the dressing without harm to the dye. A British patent gives for colored goods a method of solvent extraction of the natural wax and oil from the fiber and a moderation of the alkali boil, claiming a better bleach than without the solvent action. The expense has prevented the wide spread use of solvent extraction.

It is claimed a boil in soda ash and Turkey-red oil followed by bleaching will result in much less loss in weight. Higgins found that two such boils with a subsequent bleach used five times as much bleaching powder as the ordinary process, with the result that impurities still on the fibers gave the greater weight, and the linen used in this experiment was still yellow and unsuitable for market. He concludes that a thorough scouring is the cheapest way to obtain a good white.

Bleachers sometimes allow the scoured material to cool in the kiers. Many impurities removed by the hot lye will be reabsorbed from the solution upon cooling.

Properly scoured cloth does not have a great amount of coloring matter left in it; therefore there is little work for the "chemic" as the bleach liquor is called.

Bleaching. Bleaching powder still remains as the chief oxidizing agent in bleaching cotton. Hydrogen peroxide is valuable where chlorine will cause injury to the fiber as when cotton is mixed with wool or silk. Sodium and hydrogen peroxide and sodium perborate have had but limited use in cotton bleaching because of their higher cost; especially is that true of the perborate. Perborate will mix with soap and washing powders but because of expense has not been extensively used in bleaching or in laundry preparations. Considerable advertising is being given to peroxide bleaching. If properly controlled a steady liberation of oxygen throughout the entire material can be obtained by changes of temperature or by adding acid or alkali. It is claimed that oxygen bleached materials show remarkable softness, elasticity, brilliancy, strength, and life, and a permanent white. Peroxide manufacturers claim peroxide bleaching shortens the time to one-third that of the usual process.

In bleaching, the goods are left in the bleaching solution until the coloring matter is entirely or practically gone, then rinsed, and put into the hydrochloric acid solution, where any remaining basic calcium compounds are removed. The bleaching effect is due to the hypochlorous acid which gives up oxygen directly, and the by-product is hydrochloric acid. Sodium hypochlorite, prepared from liquid chlorine and alkali, from bleaching powder and alkali, or from electrolysis of salt, is more soluble than bleaching powder and liberates more hypochlorous acid. However, it is more expensive. If the calcium compound is carefully dissolved there will be no particles to settle on the cloth and less waste than is too frequently the case. Heat, alkali, and the sun's rays all decrease the stability of the bleaching powder, thereby increasing the bleaching action. It is claimed that the presence of common salt as in electrolytic liquor, stimulates the action. This has been shown to be an initial effect and the final result to be the same with or without the salt.

If bleaching is done too rapidly the time is insufficient to allow thorough penetration into the fiber and the bleaching is superficial, whereas too slow a bleaching action will permit the oxidizing agent to attack the cellulose, presumably forming oxycellulose. The present tendency is toward as much reduction of time as possible. One method (Brin Oxygen Company) subjects the material to the action of chlorine in the presence of oxygen. Gaseous chlorine or hypochlorite of lime may be used. Schreiner's ozonized turpentine method is interesting. It has been found that metallic oxides of copper, iron, cobalt, manganese, and chromium accelerate the evolution of oxygen from bleaching powder solutions.

The use of chlorine gas in water is being advocated. A solution of chlorine yields HOCl and HCl . The reaction is reversible. The addition of calcium carbonate increases the bleaching properties by removing the HCl formed. The HOCl yields oxygen and HCl . The presence of small amounts of HCl in bleaching liquors increases the bleaching action. An excess of HCl gives an excess of free chlorine and a weak bleaching solution, *i.e.*, reverses the above equation. The further addition of calcium carbonate removes the HCl and again increases the bleaching action.

As a source of sodium hypochlorite, chlorine gas is run into a cold solution of caustic soda or soda ash until saturated. Chlorine gas is a by-product in the electrolysis of salt in the manufacture of caustic soda. The gas is dried, liquefied, and put into steel cylinders. Considerable information is being published on the uses and methods of handling liquid chlorine and chlorine gas. Liquid chlorine and soda ash or waste caustic soda liquors recovered from mercerizing can be made up into clear liquors ready for immediate use and under constant control of the bleaching strength, whereas chloride of lime loses strength on exposure and deposits a heavy sludge when dissolved. In such a solution there are no lime salts present as in chloride of lime and there is no danger of tendering and discoloring the goods from the adhering of particles of lime. This method of bleaching has recently come into extensive use, its nicety and efficiency making a strong appeal though the cost of installation is high.

Electrolytic bleach liquors are prepared by the action of the electric current on a solution of common salt, forming a sodium hypochlorite solution. Great claims have been made for this bleach but actual bleaching tests carried out with sodium hypochlorite solutions made from bleaching powder and soda ash, from liquid chlorine and soda ash, and from electrolytic liquor, all show practically the same bleaching effect for the same content of available chlorine. The process requires greater attention than does the dissolving of bleaching powder, and the cost depends on the initial cost of the salt and of the current. Higgins makes the statement that no electrolyzer will give a solution strong enough for ordinary bleaching. This method has proved successful in small scale operations, as laundries, but Matthews considers liquid chlorine more satisfactory and less costly.

The strengths of bleaching liquors have been tested by means of an hydrometer. The same is true of the control of the concentration of most of the baths in use in scouring and bleaching. More modern methods are being introduced, for the specific gravity as measured by the hydrometer is but very roughly a register of the amount of available chlorine or the strength of any of the solutions.¹

¹ For a complete consideration of the processes included in the operations of scouring and bleaching, reference should be made to text books, such as "Bleaching and Related Processes" by Matthews. "Bleaching" by Higgins is a review of the researches on scouring and bleaching between 1908 and 1920, being largely an account of the author's own work.

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A COURSE IN MARKETING

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Recent developments in the food situation have led to a more intensive study of the production and distribution of food products. By means of the revised course in Marketing, the Home Economics division at Iowa State College is aiming to make the future housewives of Iowa realize their responsibility as buyers of food stuffs, by giving them a practical knowledge of market conditions. The term "marketing" presents two ideas. The older one is that of the housewife going to the market with her basket to secure the family rations. "Marketing" as now used in commerce and trade, carries the larger idea of getting the products from producer to consumer. It is believed that the problems of consumer and producer can be solved only by a clearer understanding of these two ideas included in the broad term "marketing."

The course in marketing consists of a one hour lecture period and two three hour laboratory periods each week for one quarter. In the laboratory, a study is made of specific foods. In order that the information may be in condensed form, special charts for each type of food are filled out in class. For example, two lessons are spent on vegetables, using the following chart:

Vegetables

NAME	PART USED	SEASON	POINTS IN CHOICE	PRICE	AMOUNT TO BUY FOR SIX	STORAGE	VALUE	USE
.....
.....
.....
.....
.....

Illustrative material consists of fresh vegetables where possible. The work with potatoes illustrates the type of problem. Potatoes grown and found in Iowa markets are shown¹ and cut to test for black heart rot, black ring, freezing, scab, and other defects. They are boiled, baked, and mashed to note characteristic cooking properties. The selection of winter storage potatoes is discussed, as well as the best methods of

¹ Iowa State College bulletin no. 33, "Identification of Potato Varieties" is used to show characteristics and market season of each.

storage. The class finds the number of pounds of potatoes per bushel, the number of potatoes per pound, the number of servings of mashed and of creamed potatoes per pound, and the percentage of waste in peeling different sizes and shapes.

In the work with fresh fruit, a similar chart is used. With dried fruits, package and bulk goods are discussed as to sanitation, appearance, and cost. All sizes of apricots and prunes are cooked to notice size, flavor, condition, and waste.

Two lessons are given to the study of tea, coffee, cocoa, chocolate, and spices. Brands are tested for adulteration, flavor, cost per serving, and appearance.

In the work with starch and cereal products, the students are taught the importance of reading labels and estimating the true cost per pound of all package goods. Prepared cake and pancake flours are tested for texture, flavor, and cost.

One lesson deals with fats and oils on our markets. Experimental cookery results are used, noting comparative cost and varying results from different fats and oils used for flavoring, shortening, and deep fat frying.

Eggs are studied as to grades, selection, and storage. Dried egg and the so-called "egg substitutes" are tested in cakes, mayonnaise, and custards.

The lessons on fish and meat, given with the coöperation of the Animal Husbandry Department, emphasize proper selection and care in the home.

State and Federal Pure Food Laws are examined with reference to the commercially canned fruits, vegetables, meat, and fish. The students are taught grades and brands of goods. Different sized cans are opened in class and the following information tabulated:

Canned Goods

NAME	BRAND	GRADE	PRICE	SIZE CAN	NET WEIGHT	WEIGHT SOLIDS	MEASURE		COLOR	FLAVOR	PACK
							Liquids	Solids			
.....
.....
.....
.....
.....

Reports of inspection of the local supply of fresh and canned milk are considered in the study of dairy products. The products studied are condensed, evaporated, and dried milk, and brands of cheese, their market appearance, flavor, cost, and storage.

With each type of food, a study is made of the prepared products on the market to compare their flavor and cost with homemade products. Some of the foods tested are salad dressing, pickles, meat loaf, pancake syrups, pie fillings, quick puddings.

The lecture work presents to the class the problems involved in getting food from the producer to the consumer, the spread of difference in prices, functions of the various middle men, and the possibility of misuse of their power, and the factors at work to organize and regulate these processes. Special emphasis is given to the work of the Bureau of Markets in the standardization of products, weights, measures, and containers, and attention is given to all federal and state laws relative to the sale of food stuffs, including packing, shipping, and storing.

At the beginning of the term, each student chooses a project for practical research and investigation. Frequent conferences with the instructors and consultations with specialists in the college and in the trades vitalize the projects. Examples of subjects are:

1. Compare the Pure Food and the Sanitary Laws of Iowa with those of five other states.
2. What are the causes and results of the investigation of the meat packers?
3. Study the local grocery stores as to sanitation, quality of goods, prices, and other conditions.
4. Chart egg prices in New York, Des Moines, and Ames for one month. Why the changes and differences? What determines price?
5. Chart prices paid for ten staple products in Des Moines, Ames, and a village retail store. Explain variations in price.
6. Study advertisements of foodstuffs. Give advantages and disadvantages of buying these foods. Illustrate.

A field trip to Des Moines includes the public market, a wholesale house, a meat packing house, a large retail store and a fish market. Several lectures are given by men in the produce business.

SPECIAL METHODS COURSE IN HOME ECONOMICS

EFFIE I. RAITT

University of Washington, Seattle

- I. Brief survey of the household in successive periods of the world's history.
 1. Points considered: a, type of family; b, women's social position; c, education of children; d, household a productive unit; e, religious bond—economic bond.
 2. Periods: a, primitive times; b, Hebrew; c, Greek; d, Roman; e, Middle Ages; f, Seventeenth and Eighteenth Centuries; g, Colonial times in United States.
- II. Present status of the American home and its needs.
 1. Sources of help.
 2. Analysis of the job of homemaking: a, organization of the family—division of labor, division of responsibility, coöperation (sympathy, unity of purpose); b, social responsibility; c, civic responsibility; d, recreational life of the family—hospitality; e, religious training; f, education in the home—habit formation; g, care of dependents—children, the sick, the aged; h, selection and care of the house, its furnishings and equipment; i, household accounts and budgets; j, feeding the family; k, clothing the family.
- III. The meaning of education for the student as:
 1. An individual.
 2. A member of society.
 3. A bread winner.
- IV. Home economics education.
 1. Its contributions in the general scheme of education.
 2. Factors influencing development: a, philanthropic activities (1) cooking and sewing schools—New York, Boston, and Philadelphia, (2) the kitchen garden movement; b, spread of higher education for women; c, development of science; d, the manual training movement; e, vocational educational aims.
 3. Educational agencies: a, grade schools; b, junior high schools; c, general high schools; d, vocational and technical high schools; e, private schools; f, continuation and part-time classes; g, trade schools; h, evening schools; i, Young Women's Christian Association classes; j, church and settlement classes; k, extension work of various types; l, women's clubs; m, Camp Fire Girls; n, Girl Scouts; o, Junior Red Cross, p, other agencies.

4. Status and function of each group in general.
5. Home economics in the 7th and 8th grades and in high school:
 - a. Basis for the work: (1) needs of the girl, the family, the community; (2) modification made necessary by the character of the community, groups to be reached, time allowed, correlation with other subjects, equipment, cost.
 - b. Organization of courses: (1) factors to be studied (a) State course of study—its value and need for modification; (b) Smith-Hughes regulations and state provisions; (c) selection of subject matter as determined by needs.
 - c. Common methods of presenting lessons and value of each: dictation, discussion, demonstration, experiments, text books and manuals, illustrative materials, excursions.
 - d. The project method:
 - (1) Comparison of value of purposeful activity on the part of the pupil with task imposed by the teacher.
 - (2) Types of projects: (a) school room projects (objective or work should be clear to pupils); (b) observation and report projects; (c) home projects: essentials—purposeful activity on the part of the pupil must involve managerial skill, must afford opportunity for gaining new knowledge, must give opportunity for developing manipulative ability, must be conducted under approximately normal conditions, must parallel class room instruction, must have a plan and records, must be supervised.
 - e. Analysis of subject matter for teaching points. (Cover entire range of homemaking activities as far as limitation of classroom permits. II, 2. Refer to analysis of the job of homemaking.)
 - f. Laboratory management: (1) housekeepers duties; (2) creating home atmosphere; (3) hostess duties—flowers and greens, receiving visitors; (4) care of equipment—towels, machines; (5) care of supplies—cupboards, closets, etc.; (6) disposal of products from food classes—pupils own lunch, luncheon for groups of teachers, sales and special orders, take home, school lunch room.
 - g. The lesson plan: use, form, practice in writing lesson plans.
 - h. Demonstration lessons by members of the class, using class as pupils: (1) presenting lesson; (2) judging lesson—objective, teaching points, methods of presentation, time division, laboratory management, summary.

- i. Establishing standards in home economics: (1) score cards; (2) note books; (3) examinations; (4) tests and measurements—speed, skill, ability to make application, initiative used, ability to organize, ability to judge relative values.
6. Part time and continuation classes: a, purpose; b, type of pupils and their needs; c, selection of subject matter; d, methods of presenting; e, Smith-Hughes regulations and state provisions; f, practice in organizing courses.
7. Evening schools: a, purpose; b, kind of work desired; c, needs of pupils and means of ascertaining; d, selection of subject matter; e, methods of presenting; f, Smith-Hughes regulations and state provisions; g, practice in preparing unit courses; h, cost; i, equipment.
8. Extension work: a, history; b, present status; c, needs and methods; d, Smith-Lever Act.

V. Related subjects education.

1. Types.

- a. Related science courses: (1) general biology including botany, zoology, bacteriology and sanitation, physiology, hygiene; (2) household physics; (3) household chemistry.
- b. Related art courses: (1) principles of design; (2) applied design.

2. Practice in planning courses.

3. Consideration of place in the curriculum.

VI. Plant and equipment for homemaking classes.

1. Types.

- a. Laboratory: (1) food; (2) clothing; (3) bedroom and bathroom; (4) dining room; (5) laundry.
- b. Accessories and substitutes: (1) teachers' room; (2) special rooms in school such as faculty room, office, girls' rest room; (3) teacherages; private homes for special lessons.
- c. Character of laboratories as to: (1) location; (2) lighting and ventilation; (3) finish and color; (4) storage facilities; (5) equipment—amount, arrangement, kind, cost.

VII. Bibliography.

1. Text books—manuals, books for reference. Review and record in card catalogue, giving author, title, type, purpose, cost, publisher, special features, criticism.
2. Federal, state, and private bulletins, pamphlets, leaflets. List and note value and special features.
3. Magazines and journals. Estimated value, cost, publisher.

VIII. Illustrative material and supplies.

1. Source.
2. Cost.
3. Care.

IX. The teacher.

1. Administrative duties: a, accounts; b, records and reports; c, inventories.
2. Community life: a, teacher's place; b, methods of securing interest in home economics work; c, activities related to home economics—Women's Club, Parent Teacher Association, Child Welfare Organization, work of public health nurse.
3. Professional life: a, relation to other teachers; b, loyalty to school officials; c, attendance of national, state, and local educational meetings; d, means of advancement.
4. Personal life: a, recreation; b, health; c, living conditions; d, personal accounts and budgets; e, appropriate dress.

BASAL METABOLISM AND FOOD CONSUMPTION OF UNDERWEIGHT COLLEGE WOMEN

KATHARINE BLUNT AND VIRGINIA BAUER

(Continued from April)

FOOD CONSUMPTION

The other feature of the study of underweight young women consisted of observations on their food consumption. The diet of each girl was observed for two typical days often consecutively and usually within the week of the first metabolism observation.

Method of Study. The method generally employed was for the younger of the writers to be present at each meal and to weigh or measure all food served and what remained uneaten. Most of the girls ate either at the University Commons or in one of the Women's Halls. A careful description of all food eaten was kept as the meals were weighed, the thickness of sauces, richness of desserts and gravies, sweetness, amount of egg, and other points being noted. The supervisor of the Commons and of the Halls furnished information in regard to the proportions of a number of dishes served at these places.

The girls kept a record of all food eaten between meals. The size of these portions had to be approximated, but, as, contrary to expectations, the actual

between meal eating was very small, no important error was introduced. As it was impossible for the writer to be present at the meals of five of the subjects who ate breakfast and dinner at home, the use of the scales and measuring cup was carefully explained, and the girls themselves kept the record, describing the food eaten. If this description was not clear they were asked about it more in detail when the list was completed. In the latter part of the work two girls who ate at the University Commons were simply told to keep a record of the food they chose and what was not eaten. The portions had been repeatedly weighed and the girls usually ate all that was served so that their estimation of the bit which was occasionally left was not important in affecting the final results. In the calculations, Rose "Laboratory Manual of Dietetics" and "Feeding the Family" and some data prepared in this laboratory by the dietaries class were used.

The attempt was made not to influence the young women in any way on the days their diets were observed. The fact that most of them were not home economics students and knew very little about food selection made it all the more probable that self-consciousness did not affect their usual habits and that they were eating about as they usually did.

This method of making a dietary study is obviously not the most accurate and two days' diet is a smaller number than is desirable; but it is believed that sufficient care has been taken in the weighing and in the computations, and in the effort to secure meals in accordance with the subjects' usual habits to make the results of value.

Results. The results of the dietary studies are given in Table 5. It may be seen that ten of the girls were eating less than 1800 calories per day, sixteen less than 2000, and only two over 2200. One extreme case (omitted from the average) consumed only 970 calories per day. This subject, a very inactive, rather nervous young woman, declared that the two days studied were entirely fair samples of her dietary habits, and friends in the dormitory supported her in this statement. While it is of course unlikely that her statement can be strictly true, since her basal metabolism was higher than the calories of her food, yet it is probable that she often indulged in this limited food intake. The calories per kilo for this student were 19.1 and for the other 18 ranged from 31.1 to 52.1, the average for the 18 being 38.2.

The relation between the per cent underweight and the food intake is not entirely consistent. It is interesting, however, that nos. 1, 5, 7, and 10 who were badly underweight had a very low average intake.

Adequacy of Diets. There must be some standard with which to compare these diets if we are to test their adequacy. There seems to be a diversity of opinion as to the calories actually required by a young woman of rather sedentary habits.

We might employ the well-known standard of a 70-kilo man of sedentary occupation requiring 2500 calories. Calculating on that basis, using the aver-

age weight of this group, 48.4 kilos, their energy requirement would be 1710 calories, or 35.3 calories per kilo.

If instead of their actual weight as it is we take the average that they should have, or 58.6 kilos, calculation from this standard gives 2093 calories, or 43.2 calories for each of the 48.4 kilos which they actually have. It is probable that the method of arriving at this higher figure is justifiable, since the extra weight of the normal individual is in large part due to non-metabolizing fat deposits lacking in these underweights.

The Inter-Allied Scientific Food Commission (11) fixed the energy requirement of a sedentary munitions worker somewhat higher—at 2200 calories, or 39.3 calories per kilo.

TABLE 5
Daily food consumption

NUMBER	UNDER WEIGHT	WEIGHT	DAYS	TOTAL CALO- RIES	CALO- RIES PER KILO- GRAM	PROTEIN	MEALS EATEN AT	EXCESS OF FOOD OVER BASAL
	<i>per cent</i>	<i>kg.</i>				<i>gm.</i>		<i>calories</i>
1	26	48.1	I	1575		54	U. Commons	303
			II	1770		50		
			Av.	1673	34.8	52		
2	24	46.0	I	1940		44	Home U. Commons Lunch	708
			II	1825		66		
			Av.	1883	40.7	55		
3	23	49.6	I	1940		73	Home	573
			II	1825		74		
			Av.	1883	39.7	74		
4	22	47.3	I	2000		85	U. Dormitory	427
			II	1655		50		
			Av.	1827	38.6	67		
5	21	52.0	I	1830		62	U. Commons	417
			II	1745		65		
			Av.	1787	34.3	64		
6	21	49.1	I	1860		56	U. Commons	
			II	2110		46		
			Av.	1990	40.5	51		
7	20	47.3	I	1505		49	U. Commons	455
			II	1865		82		
			Av.	1685	33.5	62		
8	19	46.8	No food consumption data					

TABLE 5—Continued

NUMBER	UNDER WEIGHT	WEIGHT	DAYS	TOTAL CALO- RIES	CALO- RIES PER KILO- GRAM	PROTEIN	MEALS EATEN AT	EXCESS OF FOOD OVER BASAL
	<i>per cent</i>	<i>kg.</i>				<i>gm.</i>		<i>calories</i>
9	19	44.7	I	1985		71	Tea room	
			II	1940		70		
			Av.	1963	43.5	71		
10	19	49.7	I	1675		33	U. Commons	410
			II	1645		51		
			Av.	1660	33.4	42		
11	18	47.3	I	2100		70	Home	381
			II	1482		51		
			Av.	1791	37.9	61		
12	15	50.0	I	1630		61	U. Commons	
			II	2090		70		
			Av.	1860	37.2	65		
13	15	45.9	I	2055		41	U. Commons	582
			II	1560		50		
			Av.	1757	38.4	45		
14	15	45.0	I	1440		33	U. Dormitory	137
			II	1355		34		
			Av.	1397	31.2	34		
15	14	52.0	I	2120		69	Home	900
			II	2340		64		
			Av.	2280	43.9	67		
16	13	47.2	I	1510		45	U. Dormitory	210
			II	1610		57		
			Av.	1560	31.5	51		
17	12	57.2	I	1606		25	U. Dormitory	583
			II	1859		64		
			Av.	1782	31.1	45		
18	12	50.8	I	960		15	U. Dormitory	427
			II	985		30		
			Av.	973	19.1	23		
19	11	51.7	I	2295		45	U. Dormitory	1183
			II	2400		69		
			Av.	2343	45.3	57		
Average of all but no. 18....				1830	37.3	56.6		519

In deciding which of these standards should be applied to the subjects of our study it is necessary to consider their activity. To obtain the necessary information they were all asked to report on the usual time spent in sleeping, sitting, and walking, the latter including actual walking, standing, dressing, etc. Their averages were 8.6 hours for sleeping, 7.6 hours for sitting, and 7.8 hours for walking, with very slight individual differences in the time for sleep and a somewhat wider range in the distribution of their walking time. They were all fairly inactive girls. None of them participated in any formal exercise other than the two hours a week prescribed by the Physical Education Department. The fact that they averaged nearly nine hours sleep is surprising and is possibly the result of the persistent advice of the Physical Education Department. It is probable also that they tired more quickly than the better nourished person and that their fatigue induced them to go to bed earlier. In fact a number of the subjects said that they became tired very easily.

To calculate food demand from these reports in an effort to find the energy requirement above the basal metabolism is interesting but of course not very conclusive, and for our subjects there are two special difficulties: the vagueness as to the kind of activity meant by "walking etc." with its inclusion of indoor and outdoor walking and standing and laboratory work of various kinds; and the extreme restlessness of most of the subjects. It was difficult for them to relax; they moved some part of their bodies almost continually, usually entirely unconsciously, and certainly expended more energy than the person who sits quietly. This excess is usually not taken into account in estimating food requirements and we have no studies upon which to base the extra amount required.

An effort at calculation may, however, be made by employing the usual 10 per cent increase above the basal, for the specific dynamic action of the food, and some of the figures obtained by Benedict and Johnson (12) in their observations on successive groups of Simmons College students in the large respiration chamber of the Nutrition Laboratory. They found a 10 per cent increase above the basal for their young women when sitting quietly reading, and a further increase of 13 per cent when hemming. This 23 per cent is probably fair to use for our women while sitting. Further, they found 67 calories per hour increase for very slow walking. Our women weigh less than theirs (48.4 kilos instead of 54 kilos) so the walking figure may be taken for us as 60 calories per hour. We then have:

1300 calories, basal metabolism
130 calories, 10 per cent increase for food
95 calories, sitting 7.6 hours
468 calories, walking 7.8 hours
—
1993 calories, total

This gives us approximately 2000 calories, or about 40 calories per kilo for their daily requirement from this rough calculation and with only the minimum allowance for waste in digestion—almost surely a very conservative estimate.

Actual dietary studies of similar groups are also to the point as a basis of comparison. The Vassar College study made by Macleod and Griggs (13), one of the most recent of these, showed that the actual average food intake of the students, at meals, was 2698 calories per day. This does not include the between meal eating which proved to be quite large. Earlier studies made at women's dormitories at the University of Chicago, Lake Erie College, North Dakota Agricultural College, and Wesleyan University showed the average girl eating 3277, 2592, 2589, and 2544 calories, respectively. These high figures further support the opinion that the average of 2000 calories or 39 or 40 calories per kilo is none too high a standard for our subjects.

Instead of this, 11 of them (exclusive of the erratic no. 18 with extremely low calories) were eating less than 39.5 calories per kilo, eating in fact, amounts varying from 38.6 calories down to 31.1 calories. It is extremely probable that these 11 were not getting enough to maintain their weight, and surely not enough to make much of a gain. It is known that a number of them were actually losing at the time of this experiment. Nine of these 11 whose basal metabolism was observed were eating less than 500 calories above their basal—a difference too small to meet adequately the demand of their activities and the specific dynamic action of their food. Two whose current loss in weight was especially marked consumed only 137 and 210 calories extra. Of the seven who were eating more than 39.5 calories per kilo all also showed more than 500 calories excess over their basal. One, no 3, was known to be gaining. Knowledge of the others is lacking.

Other Comments on Diet Study. The quality of the diets was not so good as one might wish. If we accept Sherman's estimate of the protein requirement as roughly one gram per kilo per day, we find that four were below that limit even on the basis of their own low weight, and nine were below 55 grams per day, probably barely meeting their protein needs.

Only one of the entire group ate fruit more than once a day and four less than once a day. Also only four were eating vegetables other than potatoes more than once a day, the majority averaging only one such vegetable. This is very low when one considers the rather small portions often served in a cafeteria or dormitory. The same criticism can be made of their use of milk. Only four of the subjects were drinking as much as one pint per day, the usual amount being one half pint per day. On the whole, then, their food consumption consisted too largely of cereals and sugar and did not contain sufficient milk, fruit, and vegetables.

Three were inclined to eat very small breakfasts but no one went without breakfast. The between meal eating was not large. Several ate apples, oranges, or bananas the days they were observed, three had cake, four had small

amounts of candy. Only one had ice cream. No. 4 was the only subject whose between meal eating was really a large factor.

It was very interesting to note the girls' own ideas about their food habits. When first approached practically all of them declared they were very certain that they were eating enough. After the study had been made and they were told that to gain they must eat more, most of them said they had no appetite for more; they simply could not eat any more. The suggestion was made that probably their appetite was largely a matter of habit and by practice they could increase their food consumption.

Another idea practically all of them had was that they were thin because one of their parents or other relatives was. It "ran in the family" and there was nothing that could be done about it. The girls were told that the fact still remained that they were not eating enough to enable them to increase their weight, and that they would probably feel much better if they ate more. This possible improvement is illustrated by subject no. 3, who has been observed for nearly five months. At the beginning she weighed only 105 pounds and was 25 per cent underweight. She became alarmed at her condition and began to try to eat more, but did not change any of her other habits. In four months she had gained 12 pounds. She says it is most surprising how much more she can eat now and how much better and more ambitious she feels.

SUMMARY

A group of 19 college women who were underweight by comparison with life insurance standards, and who were of a nervous type, were studied to determine their basal metabolism and their food consumption. Their basal metabolism like that of some underweight women observed in the Boston Nutrition Laboratory, averaged almost normal. Their food consumption, however, was low, averaging only 1830 calories or 37.3 calories per kilo. Eleven of them ate less than 500 calories above their basal metabolism, one, on the two days observed, even less than her basal, and two whose current loss in weight was especially marked, only 137 and 210 calories above.

From these facts and a discussion of their probable requirement it is concluded that many of the groups were hardly eating enough for their daily needs and certainly not enough for any marked gain in weight.

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12. Benedict and Johnson: Energy Loss of Young Women During the Muscular Activity of Light Household Work, *Proc. Am. Phil. Soc.*, 1919, 58: 89.
13. Macleod and Griggs: A Dietary Study at Vassar College, *J. Home Econ.*, 1918, 10: 97.

(Concluded)

CURRENT HOME ECONOMICS RESEARCH IN AMERICAN
COLLEGES AND UNIVERSITIES AND IN
GOVERNMENT INSTITUTIONS

From the Research Committee of the American Home Economics
Association

(Continued from April)

Note.—It may very likely be objected, that a certain number of these theses are not explicitly stated and may have been only very vaguely conceived. In some cases, those who are at present in charge of college departments may not have been responsible for all the theses announced as coming from the departments.

THE UNIVERSITY OF CHICAGO, 1919-1921

Nutrition, Food Chemistry, and Experimental Cooking

- The Carbohydrates of Navy Beans. Marietta Eichelberger. Master's thesis, 1919.
- The Acidity of Cooked Vegetables and their Volatile Acid and Sulfur. Mary Hahn. Master's thesis, 1919.
- The Digestibility of Bacon. Katharine Blunt and Marguerite G. Mallon. *Jour. Biol. Chem.*, 38, 43, 1919. Part of Master's thesis of M. G. Mallon.
- What is Malnutrition? Lydia Roberts. U. S. Children's Bureau, Publication No. 59, 1919.
- Changes in Fats Absorbed by Fried Foods. Sybil Woodruff and Katharine Blunt. *Jour. Home Econ.*, 11, 440, 1919. Part of Master's thesis of S. Woodruff.
- A Malnutrition Clinic as a University Problem in Applied Dietaries. Lydia Roberts. *Jour. Home Econ.*, 11, 95, 1919. Part of Master's thesis.
- Review of Literature on Chemistry of Yeast Breads with Experimental Work on Fermentation Temperatures. Lotta Day. Master's thesis, 1920.
- The Effect of Cooking on the Water-Soluble Vitamins in Carrots and Navy Beans. Elizabeth W. Miller. *Jour. Biol. Chem.*, 44, 159, 1920. Part of Doctor's thesis in Household Administration.
- The Composition of Peanut Meal and Its Use as a Diabetic Food. Margaret Mumford. Master's thesis, 1920.
- Comparative Effect of Caffeine and Coffee on Respiratory Metabolism. Minnie Phillips. Master's thesis, 1920.
- Comparison of Methods for Determination of Fat in Breadstuffs. Pearl E. Ruby. Master's thesis, 1920.
- Creatinin and Creatin in the Blood. Chi Che Wang and Mamie Dentler. *Jour. Biol. Chem.*, 45, 237, 1920. Part of Master's thesis of M. Dentler.
- Water-Soluble B. in Cabbage and Onion. Bertha K. Whipple. *Jour. Biol. Chem.*, 44, 175, 1920. Master's thesis, 1920.
- A Study of Underweight College Women: Their Basal Metabolism, Food Consumption and Hemoglobin. Virginia Bauer. Master's thesis, 1921.
- Basal Metabolism of Normal Women. Katharine Blunt and Marie Dye. *Jour. Biol. Chem.*, 47, 69, 1921. Part of Doctor's thesis of M. Dye.
- Basal Metabolism of Underweight Children. Katharine Blunt, Alta Nelson, and Harriet Curry Oleson. *Jour. Biol. Chem.*, 49, 247, 1921.
- A Study of the Blood Count and Hemoglobin of High School Girls in Relation to their Diet. Falba Foote. Master's thesis, 1921.

- Relation between Composition and Jelly-Making Properties of Apple Juice. Evelyn G. Halliday.
- Culinary Uses of Frozen Fruits. Evelyn G. Halliday and Margaret Smith.
- Changes in the Distribution of Nitrogen in Egg White in Cooking. Ruth Kern. Master's thesis, 1921.
- Changes in Fat Constants Due to Cooking Processes. Ruth Lilley. Master's thesis, 1921.
- The Effect of Certain Stimulating Substances on the Invertase Activity of Yeast. Elizabeth W. Miller. *Jour. Biol. Chem.*, 48, 329, 1921. Part of Doctor's thesis in Household Administration.
- The Effect of Theobromine on Respiratory Metabolism. Margaret O'Loughlin. Master's thesis, 1921.
- Report on Child Health School held at the University of Chicago. Lydia J. Roberts.
- A Study of the Diets of Pre-School Children of Gary, Indiana. A section of a bulletin in preparation by the U. S. Children's Bureau. Lydia J. Roberts.
- The Relation between Viscosity and Imbibition of Gluten and the Volume and Texture of Flour Mixtures as Affected by Baking Powder. Mildred Tackaberry. Master's thesis, 1921.

Institution Economics

- Occupations other than Teaching Open to the Food-trained Women. Effie M. Carp. Master's thesis, 1921.

Home Economics Education and Clothing

- Analysis of Home Economics Textbooks. Leona F. Bowman. Master's thesis, 1919. (Incorporated in the Monograph, *Home Economics in American Schools*.)
- Home Economics in American Schools. Supplementary Educational Monographs, Vol. II, No. 6, University of Chicago, 1921. Mabel B. Trilling, Leona F. Bowman, and others.
- Standardized Tests in Textiles and Clothing. Mabel B. Trilling and Florence Williams. *Jour. Home Econ.*, 12, 486, 1920.
- Factors of Cost in Women's Clothing. Lillian Baker. Master's thesis, 1921.
- Organization of Food and Clothing Courses in High Schools of the United States. Leona F. Bowman.
- Textiles: Its Importance as a Separate Subject in a High School Sewing Course. Leona F. Bowman.
- Home Economics Tests: Neck Finishes for Undergarments. Adah Hess.
- Objectives in Textile Education. Mabel B. Trilling.
- Informal Tests in Teaching Textiles and Clothing. Mabel B. Trilling and Adah Hess. *Jour. Home Econ.*, 13, 483, October, 1921.
- Standards of Attainment in Machine Sewing. Florence Williams.

IOWA STATE COLLEGE, AMES

- Textile Buying and Shopping Habits and Factors that will Tend to Improve them. Callie May Bliss. Master's thesis, 1921.
- 13 graduate students are at work in the Home Economics Division this year (1921-22), 5 or 6 of whom may probably complete work for the master's degree by close of summer session, 1922. Some of these problems are: Experimental Studies on Gingerbread; Extent to Which Artificial Silk is Replacing True Silk in Clothing; Current Methods of Teaching Laundering in Iowa High Schools; Plan for Construction, Decoration, and Furnishing of Model Apartment, with Cost Estimates.

SCHOOL OF PRACTICAL ARTS, TEACHERS COLLEGE, COLUMBIA UNIVERSITY¹

Departments concerned are indicated as follows: B, Biology; BC, Biochemistry; C, Cookery; PT, Physical Training; HA, Household Administration; HC, Household Chemistry; N, Nutrition.

<i>Serial No.</i>	<i>Depart.</i>	<i>Subject Research.</i>
119	BC	Vitamine Yeast Test Studies
219	BC	Cream of Wheat Studies, Infant Cereal Problem
120	BC; C; HC	Studies of Frying Fats
220	BC; C	Studies of Fondant Making
320	HA	Metal Polishes and Floor Waxes
420	HC	Cleaning Agents and Effect on Fabrics
520	BC; C	Pressure Cooker Efficiency
620	C	Ice Cream Making; salt and ice proportions
720	C	Grades of Food and Buying Problems
121	N	Almonds, and Other Nuts as a Source of Vitamin A
221	N	The Utilization of Calcium in Almonds
321	N	The Basal Metabolism of Young Girls
421	BC	Researches on Corn Products Materials
521	BC	The Value of Phytin in Rickets Prevention
621	BC; PT	Hemoglobin-Standardization of Tests
721	BC	Effect of Diet on Anemia
821	BC; C	Peanut Flour Studies
921	BC	The Chemical Nature of Vitamin B
1021	N	The Utilization of Calcium in Man
1121	N	The Laxative Properties of Vegetables
1221	N	The Basal Metabolism of the White Rat
1321	HC	The Chemistry of Caramel
1421	B	The Transfer of Body Organisms and Bathing Appliances
1521	B	Butter Spoilage
1621	B	Vitamins and the Life of Stock Cultures
1721	B	Standard Teaching Outfits for High Schools
1821	B	Dish-washing and Germ Transfer
	C	Emulsification in Mayonnaise: A Project Undertaken in Co operation with Simmons College
	C	Problems in Cake Mixing

SIMMONS COLLEGE, BOSTON²

The Chloride Content of Certain Foods.

Distribution of Lime and Iron between Vegetable and Water in the Cold Pack Canning Process.

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COLORADO AGRICULTURAL COLLEGE, FORT COLLINS, 1918-1921

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Ruth F. Johnstin and Susan F. West.

Cake Making to Determine Best Temperature for Baking "Butter" Cakes. *Jour. Home Econ.*, 11, 352, 1919.

¹ Researches given here are those to which approval and grants had been made, November, 1921.

² Theses in the Chemistry Department by Household Economics Students.

THE UNIVERSITY OF MINNESOTA, ST. PAUL

Division of Home Economics

- Studies in the Determination and in the Utilization of the Relative Sweetening Power of Certain Sugars. Cecile C. Stone, Mildred Weigley, and Alice Biester.
- A Comparative Study of the Losses of Iron in Vegetables Cooked in Salted and Unsalted Water. Jean M. Dorsey and Alice Biester.
- A Study of Factors Relating to the Management and to the Food in a Group of Children's Homes. Mary C. Nye and Alice Biester.
- Studies on the Effect of Storage Upon the Keeping Quality of Certain Vegetables Canned by the One Period Cold Pack Method. Alice Biester, Mildred Weigley, and Winifred Case Knapp. (Part of thesis (M.S.) of W. C. Knapp. See *Jour. Home Econ.*, 13, 494, 1921.)

Division of Agricultural Biochemistry

- The Influence of Heat and Oxidation Upon the Nutritive and Antiscorbutic Properties of Cow's Milk. Edla V. Anderson and R. A. Dutcher. (See *Science*, 53, 446, 1921.)
- The Carbon Dioxide Diffusion Ratio in Doughs as an Index of Flour Strength. Mildred Weigley and C. H. Bailey.

College of Education

- An Analysis of Text Books in Textiles and Clothing. Ethel L. Phelps and M. E. Haggerty.
- A Study of the Relation Between Certain Variable Factors and Tensile Strength in a Group of Cotton Fabrics. (In progress.) Ethel L. Phelps and Anna Streed.

THE UNIVERSITY OF WASHINGTON, SEATTLE, WASHINGTON

- Detailed Report of Home Economics Education in Normal Schools, Colleges, and Universities in the Pacific Northwest. Part of the work of the National Committee. Effie I. Raitt, Henrietta Walker.
- Textile Research in Institutions of Higher Education as Part of the National Committee Work. Grace G. Denny.
- Testing Textiles. Grace Denny.
- Methods for Determining Shrinkage in Unbleached Muslin. Methods for Testing Textiles for Department Stores. Grace G. Denny and Research Students.
- Comparative Cost of Gas and Electricity for Cooking Purposes. Martha E. Dresslar.
- Study of Feeding Problems in Lumber Camps. Jessie R. Mueller. See *Jour. Home Econ.*, 13, 241, 1921.
- Intensive Study of Food Consumption in Summer Camp of Undernourished Children. Martha Koehne and Dorothy Kuebler.
- Relative Expenditure of Money for Different Types of Food in Family and College Groups. Martha Koehne and Students.

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- Study of Cornbreads. Rena Wiggs, 1920.
- Fats and Their Uses in Pastry Making. Mary Carter Tatum, 1921.
- The Determination of the Baking Soda Equivalent of Sour Milk. Mary Priscilla Wilson. (Chemistry Department in coöperation with Home Economics Department.)

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- No. 46. Maternity and Infant Care in Two Rural Counties in Wisconsin, 1919.

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No. 88. Maternity and Child Care in Selected Rural Areas of Mississippi.

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Child Labor and the Work of Mothers in the Shrimp and Oyster Canning Industries on the Gulf Coast.

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Report on the Study of the Pre School Child in Gary, Indiana.

SURVEYS IN HOME ECONOMICS EDUCATION, MADE BY THE BUREAU OF EDUCATION, U. S. DEPARTMENT OF THE INTERIOR, WASHINGTON, D. C.

Investigations in Methods of Teaching Home Economics in Secondary Schools. Mrs. Henrietta W. Calvin.

Investigations in the Laws, National and State, which have Affected Home Economics Teaching, Research, and Education in the United States. Mrs. Henrietta W. Calvin.

Investigations of Home Economics Education in Normal Schools. Mrs. Henrietta W. Calvin.

Investigations of Rules Governing the Certification of Home Economics Teachers for Public Schools in the Various States. Mrs. Henrietta W. Calvin.

Investigations of the Number of High Schools Offering Home Economics Courses, Number of Girls Enrolled in Classes in Such Schools, Length and Frequency of Class Periods and Number of Home Economics Teachers Employed. Mrs. Henrietta W. Calvin.

Educational Surveys in Memphis, Tenn.; San Francisco, Cal.; Elyria, Ohio; Wheeling, W. Va.; Wilmington, Del.; Elizabeth City, N. C.; State University of Arkansas; Higher Educational Institutions of Iowa. Mrs. Henrietta W. Calvin and others.

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Trade and Industrial Education for Girls and Women—A Study of Economics and Social Aspects of Vocational Education for Girls and Women. Mrs. Anna L. Burdick.

Retail Selling. Mrs. Lucinda W. Prince.

Home Projects—A Method of Instruction of Teaching Home Economics. Genevieve Fisher.

Analysis of Home Making as a Basis for Courses of Instruction. Zella E. Bigelow.

Source Material on the Teaching of Child Care and Child Welfare. The Children's Bureau in cooperation with the Federal Board for Vocational Education.

EDITORIAL

The Home Economics Teacher and the Health Program. The progress of child hygiene work in the United States during the past year is summed up by Dr. Richard A. Bolt, Director of the American Child Hygiene Association, in the February issue of *Mother and Child*. Doctor Bolt says that hand in hand with the widespread extension of educational work for child health has come the setting up of machinery to meet the needs of the community. The past year has witnessed a notable advance in our knowledge of causes of malnutrition in school children and the extent to which it occurs. Definite steps have been taken in the way of proper education of both mothers and teachers along nutrition lines, though much must be done to standardize methods of approaching the problem.

We have also progressed in recognizing the need for instruction in nutrition of normal children, as well as of children who are 10 per cent and more underweight. Dr. Eugene R. Kelley, Commissioner of Public Health of Massachusetts, in a recent issue of the Commonwealth says that future development in the field of public health rests in the enlightenment of the average man, woman, and child, by the translation of the scientific knowledge that is extant into terms for use by every one. Doctor McCollum, in a recent address before the New York Nutrition Council, stated that there was no mission so great as this discussed by Doctor Kelley.

Health education in schools is many sided but no group is more widely established or better qualified to transmit education in nutrition than the teacher of home economics. Certainly there is no person in a school system who has had such intensive training in the science of nutrition, particularly if she is a recent graduate or has taken additional courses at some good school. It would seem that she should broaden her program to include food instruction in all the grades through the grade teacher, and assume the responsibility for the formation of right food habits.

Miss McCormick in her article "The Home Economics Teacher and Community Nutrition," in the January JOURNAL, points out several ways in which the home economics teacher may initiate the work or coöperate in its development.

There are many phases of the problem. The schedule must be adjusted and, wherever possible, assistance rendered by increasing the personnel. In many cases the home economics teacher herself must take the initiative in bringing to the attention of the superintendent

the contribution which her training enables her to make to the health program. Unfortunate indeed is the school in which the vision of the home economics teacher is limited to a curriculum which includes simply cooking and sewing without an appreciation of the relation between nutrition and health. Such teachers are in the minority.

Is it not possible to work out an effective program through the coöperation of the grade teachers with the specialists in the school system? The grade teacher may be assisted by the supervisor or helping teacher to correlate health instruction with her other subject under the guidance of the medical director, school nurse, physical training director, and home economics teacher. Thus the home economics teacher may fulfill her obligation to the entire school.

Rickets and Sunlight. Out of the plethora of literature about rickets there seems to emerge at last an indication that the theories of those who have been studying its etiology and treatment are approaching some sort of agreement. McCollum of Johns Hopkins University anticipates the layman's impatience to have the rickets question settled and warns that the formation of definite conclusions had best be deferred until other experimental work is completely developed. Only two or three of the salient facts of the most recent articles are summarized here.

In regard to diet McCollum and his collaborators^{1,2} believe that an unidentified substance in cod-liver oil exerts a favorable influence on bone growth and that this substance is not fat-soluble A vitamine. When it is absent from the diet of rats, either a low calcium or a low phosphorus intake will produce rickets. Moreover, if this principle be present the animals are able to develop on a diet low in calcium much better than they could otherwise do.

Sunlight as well as the potent factor in cod-liver oil can prevent the incipency of rickets. On this point McCollum and Hess et al.³ agree, though Hess attaches no special significance to cod-liver oil as a curative. He and his co-authors, working in New York City, find that by frequent

¹ McCollum, E. V., Simmonds, N., Shipley, P. G., and Park, E. A. Is There a Substance Other than Fat-soluble A Associated with Certain Fats which Plays an Important Rôle in Bone Development? *Jour. Biol. Chem.*, 1922, 50: 5.

² Shipley, P. G., Park, E. A., McCollum, E. V., and Simmonds, N. Is There More than One Kind of Rickets? *Amer. Jour. Dis. Child.*, 1922, 23: 91.

³ Hess, A. F., Unger, L. J., and Pappenheimer, A. M. The Prevention of Rickets in Rats by Exposure to Sunlight. *Jour. Biol. Chem.*, 1922, 50: 77.

short exposures to the sun's rays the characteristic symptoms of rickets in infants are diminished in three to four weeks time.

The discovery of a possible fourth vitamine of anti-rachitic nature cannot thrill us since our wonder at the accomplishments of these elusive substances reached its peak years ago. But the astounding thing lies in the demonstration of this not yet understood power of the sun's rays to off-set the ill effects of a poor diet.

SYBIL WOODRUFF.

OPEN FORUM

The National Income of Housewives. In the computation of the national income the Bureau of Economic Research¹ deliberately omits to calculate the income for services of housewives. As far as this study is concerned the housewife is not a producer. Let us consider this a moment. Think of the change in our economic system if the cooking of meat, vegetables, fruit, and other foods were taken out of the hands of housewives, or if household management, laundering, care of children, and other household duties were transferred to the industrial system. What a tremendous income would accrue for these services!

The study reveals that 9.25 per cent of all income receivers have an income of less than \$600; 22.35 per cent, an income of less than \$800; 54.51 per cent, an income of less than \$1200; 72.01 per cent, an income of less than \$1500; 85.92 per cent, an income of less than \$2000.

The share of the national income which should be credited to housewives becomes conspicuously large by virtue of the very figures which ignore it. For as the income of a family decreases the services of the housewife increase. It is required of her that she skillfully manage a small income to meet the elemental family needs. She is obliged to render services which a small income cannot buy. She is forced to labor longer hours to compensate the deficiency in income. We have a situation which parallels the law of conservation of energy. The services and commodities which are not produced by family income find an outlet in the services of the housewife and her assistants in the family.

It is not altogether true that the Bureau of Economic Research has entirely ignored the services of housewives. In a special section an estimate of the value of the services of housewives is given which, if it were included, would comprise 20 per cent of the total income. The figure for 1909 is 8.85 billion dollars and is based upon the pay of domes-

¹ The Income of the United States, The Bureau of Economic Research, 1921.

tic servants before the war, put at \$500, and the estimated number of women engaged in housework, put at 18 million. In 1919, due to increase in wages the pay of the houseworker is put at \$900, and due to increase in population the total number of houseworkers is put at 20,700,000, giving 18.45 billion dollars as the estimated income of housewives' services.

If it is true that the value of the services of the housewife is inversely proportional to the family income, then the flat estimate of \$500 in 1909 and \$900 in 1919 is entirely too low. The figures showing the distribution of incomes quoted above give a hint as to the real value of services which the great mass of housewives are obliged to render to balance the deficiencies in the income of the great majority of American families.

There are certain practical reasons why the income analysis of the Bureau of Economic Research should omit the income of housewives. Such a significant study cannot run the risk of gross misinterpretation due to current standards of money value. For example, if the income for housewives were included the per capita income would increase from \$629 to \$796. Specially interested persons would be quick to take advantage of the figures and to give them an interpretation damaging to wage standards.

All this, however, points to the need of reorganizing the thinking of people concerning the economic services of housewives and their effect upon economic life. The way must be made ready so that the next calculation of the nation's income will not find it necessary to apologize for the exclusion of the income from more than one-fifth of our national production.

HENRY HARAP.

THE QUESTION BOX

Question: In looking over a copy of the JOURNAL of December, 1917, I notice, on page 545, the statement that "Cloves and allspice are effective in large amounts; cinnamon is not effective." In an article in the JOURNAL of December, 1911, it was stated that cloves and cinnamon were both effective, in certain amounts, for the preservation of foods in which they are used, allspice and others having been found wholly useless for this purpose. Will you kindly inform me which, if either, statement is correct?

Answer: There is considerable difference in the behavior of different organisms to the various spices. There is also some difference in the strength of the different brands of spices. In the 1911 article no attempt was made to determine the effect of the various spices on any one organism. In the experiments, the apple sauce was mixed with spice, sterilized by steam for thirty minutes, and subsequently exposed in the laboratory "for a few days to receive contamination from the air." In the other experiments (Bachmann, 1916) several types of organisms were worked with and all conditions were carefully controlled. As a result of the trials with ground spices, Miss Bachmann concludes as follows: "Cinnamon appears to have more antiseptic properties generally than either allspice or cloves. Cinnamon has little antiseptic value toward *Rhizopus*, but is valuable in preventing the growth of *Alternaria*, *Penicillium* and *Aspergillus*. Cloves are about as effective as allspice for *Rhizopus* and *Aspergillus*, but somewhat less so for *Alternaria* and *Penicillium*. . . . *B. prodigiosus* appears to be only slightly sensitive to spices, while *B. subtilis* did not grow on even a 1 to 100 dilution of cloves and of allspice."

The original article, from which the abstract in the Journal of 1917 was quoted, states "Cloves and allspice in large amounts are quite effective in preventing the growth of molds and bacteria, and cinnamon is most effective of the spices; this is true of the ground spices, their astringent oils and alcoholic extracts." The statement that "cinnamon is not effective" was obviously mis-quoted.

Question: One of our students says that the physician in charge of a large well known sanitarium states that if sugar is added to the citrus fruits when eaten, the result will be that, instead of adding to the alkalinity, an acid condition of the blood will be caused, no definite amount of sugar being stated. Is there any truth in this statement?

Answer: There is nothing in the scientific literature, so far as we can find, that warrants such a statement.

BOOKS AND LITERATURE

Here and Now Story Book. By LUCY SPRAGUE MITCHELL. New York: E. P. Dutton and Company, 1921, pp. 360. \$2.00.

Today this book is considered remarkable; tomorrow it may be considered epoch making. It is remarkable for several reasons: first, it is written from the point of view of a mother in her home, as well as that of a teacher in the schoolroom; second, it follows the scientific rather than the traditional approach to stories for children between the ages of two and seven; third, it gives a basis from the standpoint of modern psychology for the choice of content and form of stories for young children; fourth, it is a pattern book, a method book—not an anthology—with original stories by both the author and the children themselves.

The *first* reason for considering this book remarkable is that Mrs. Mitchell writes from the standpoint of a mother who knows young children, not only in the intimacy of home life, but also in the more formal life of the schoolroom. This is significant because the trend of education is toward stressing the educational development of children of nursery age, which means that the mother-teacher, before many years have passed, will have a recognized place in the teaching profession, and will be trained for it as is any other teacher.

Already, courses in household arts and science include training in the physical care of young children, and are given quite generally in high schools, technical schools and colleges. But a child is not merely a physical being. This fact scientists are emphasizing more and more. The medical profession—particularly that branch specializing in nervous illnesses—is giving convincing evidence every day that the trend of mental and moral development is largely determined during the nursery years. This being so, it is only a question of time when the mother (and let us hope the father too) will be trained for her great educational

responsibility. Mrs. Mitchell is a mother who has already made a place for herself in the educational world.

The *second* reason is that it substitutes the scientific for the traditional approach to stories for children between the ages of two and seven. In order to do this, Mrs. Mitchell has conscientiously tried to first rid herself of preconceived ideas of what characterizes suitable stories for young children. Then she has gone to the children themselves to determine what things get their spontaneous attention, and furthermore what relationships are natural and intelligible to them at two, three, four, five, six, seven years of age. In this way she determines the content of the story. To determine the form she again goes direct to the children, using their own spontaneous art forms as well as the story and verse patterns universal in their appeal to young children. The pragmatic test shows that children, even children outside of Mrs. Mitchell's groups, follow the stories with interest and delight.

The *third* reason is that it gives a basis, from the standpoint of modern psychology, for the choice of content and form of children's stories. Her own relation to the Bureau of Educational Experiments, with which one associates the name of Dr. Dewey, naturally leads one to expect that the psychological basis of her book is in accord with his teaching. She uses as this basis the *here and now*—what is familiar to a child. In "How We Think," Doctor Dewey says that what is familiar in a child's everyday life is the teacher's starting point, but that she must see that he recognizes meanings in and beyond what is familiar. Already the familiar activities of the household and neighborhood, especially where they relate to adults, are full of wonder and of mystery to a young child. Given a part in them he feels himself of importance in the social group. He needs must be doing, for he thinks in sense and

motor terms. For this reason Mrs. Mitchell clothes her stories in motor terms and terms of sense. Action, color, sound vivify both verse and story.

The *fourth* reason is that this is a pattern book with original stories by both the author and the children themselves. That it took courage to put forth such a book, Mrs. Mitchell admits, for adults do not easily speak with little children in their own language, much less publish their attempts to do so. But she has done so in the hope of reaching others who like herself are trying to follow the lead of little children into their story world. The book is rich in suggestion and illustration, with a dynamic quality challenging in its effect. For that reason it is sure to arouse discussion. The fact that it has been printed three times in its first four months shows that it is meeting a real need, although the charm and spirit with which the book is written, its cogent presentation of its thesis, hold the attention of those who read it for recreation as well as those who read it for a serious purpose.

ELIZABETH JENKINS.

A Form of Record for Hospital Social Work.

BY GERTRUDE L. FARMER. Philadelphia: J. B. Lippincott and Company, 1921, pp. 81. \$1.50.

In this book, Miss Farmer, Director, Department of Social Work, Boston City Hospital, presents a valiant attempt to break with the prolix chronological social case record and to work out for the specialized field of hospital social service a form of record which will give a succinct, vivid, accurate picture of the individual patient and the treatment involved in the nature of his trouble, and will also facilitate measurement of social cause and effect.

Miss Farmer's method is to recognize differentiation of service required and her "Form" is adjustable to this use. Briefly, it provides for three types of need:

1. The so-called "Slight" or "Short Service" rendered to a considerable number of patients without much social investigation. This is recorded on a 3 x 5 card calling for Identifying Information, Nationality,

Church, Industry, Occupation, Medical Diagnosis, Hospital Treatment, Referred by and Why, Statement of patient and possibly of nearest relatives and friends, Reports of agencies and what was done as expressed in statistical action taken.

2. Intensive social case work indicating such follow-up service as would complete the medical treatment plus the adjusting of the social problem, even if not by hospital social service. This is rendered to a comparatively small number of patients. The form used is a 5 x 8 card which provides for all the information on the "Slight Service" card and in addition includes the following topical headings: Financial Condition, Resources, and, to quote Miss Farmer, "The thought-compelling questions"—Social Problem, Social Background to Medical Condition, Plan.

3. An extension folder record is attached to the 5 x 8 record card. This consists of loose sheets, typewritten on both sides with suggested topical headings, such as How the Case Came to Us, Sources of Information, Social Analysis of Patient, Social Treatment Given. This is filed in a manila folder which bears the same number as the 5 x 8 record card of which it is the extension folder. This summarized and adaptable device is the feature which saves the form from becoming a stereotyped questionnaire. If the record cards were used without it, the form would constitute a reversion to the obsolete social case work record when the agency's action was of supreme interest and when there was little individualization of the patient and no thought of the larger social issues involved.

Admirable as it is to make a record concise, to provide for statistical measurement of significant factors, to summarize and to minimize clerical labor, that which is most fundamental to any form of social work with the individual is to determine his personality—the capacity and tendency of the individual to adjust himself to a situation, physical, mental, or social. This is not yet measurable in precise quantitative terms. The extension folder permits of a narrative supplement which may record interpretation

of the individual's character, environment, and previous and present responses to critical situations as viewed by others as well as by the worker.

To complete the form, a 3 x 5 index card, with name, address, case number, date referred, and from which medical department or service of the hospital, is filed by name, and used in connection with the 5 x 8 record card.

The danger in the use of forms should be recognized especially if placed in the hands of a partially trained worker. The spaced topical heading encourages an easy reliance upon one word to describe a problem or a person, such as shiftless. If not checked by a watchful supervisor a form will tend to arbitrarily assign one case as the social problem, and will therefore react upon the thinking of the worker, limiting the range of suggested causes and permitting her personal bias to enter into the decision of what shall be done to help the individual. One also questions the use of the "Short Service" card with its limited information as sufficient basis upon which to "interpret to outside agencies the need involved in the after-care of the patient, the major part of the outside social care of whom is to be borne by the coöperating agencies."

In the analytical study of cases referred from a hospital social service department it is found that much unnecessary suffering and delay are inflicted on the patient because of a failure to prescribe the fitting agency to help the patient.

From this sounding of warning against a too narrow use of forms for social records attention should be drawn to the intrinsic merit of Miss Farmer's Form. It is a direct challenge to the social worker to tidy up her mind, to search for facts to analyze and to interpret in order to solve a problem of human welfare; to the social organization to provide supervision which will see that this use of the form is made by the worker in order to secure the best return from minimum mechanical effort.

Miss Farmer very properly asks this pointed question, "While admitting that to succeed in writing a summary picture record in . . . few words . . . and in readable form is not easy and

demands a certain intellectual and educational background, do we not want all hospital social service workers to stand up to such a test?"

Social undertakings in allied fields will call for the same test for its personnel; therefore this book will be highly suggestive to leaders in other social enterprises, and after reading it they will be disposed to agree with Miss Farmer in saying that "The conveying of information in few words, yet adequately . . . is part of the technique of a good hospital social worker. It is quite useful in other walks of life."

HARRIET TOWNSEND,

Teachers College.

Handbook of Social Resources of the United States. By GENEVIEVE POYNEER HENDRICKS. Washington: American Red Cross, 1921, pp. 300. \$1.00.

This handbook was compiled to furnish Red Cross workers with information regarding national social agencies in the United States. It does not include associations whose work is confined to local interests or to war time service. Inclusion in the book does not imply endorsement of purpose or methods, nor does omission imply disapproval.

"Endeavor has been made to include for each organization mention of its general program; its specific activities; the annual meeting, and whether it is open to the public; the names and work of special and standing committees and commissions; field work and lecture service, to whom available and on what terms; information service and clearing house work, and how this service may be secured; references and library facilities; survey and investigational activities."

The 371 organizations and institutions described appear in alphabetical order, but they may be located by consulting the subject index or the locality index. The loose leaf form allows for the insertion of additional agencies or information.

While this book was intended for the use of Red Cross workers it will be found extremely useful to any member of a national organization interested in coöperating with other organizations.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture:

Chimneys and Fireplaces. Farmer's Bulletin 1230.

Food Values: How Foods Meet Body Needs. By E. A. Winslow. Farmer's Bulletin 975.

An Improved Method of Making Sugar Beet Sirup. By C. O. Townsend. Farmer's Bulletin 1241.

The Paper Dress Form. Circular 207.

A Week's Food for an Average Family. By C. L. Hunt. Farmer's Bulletin 1228.

Issued by the U. S. Department of Commerce, Bureau of Census:

Cotton Production and Distribution, Season of 1920-1921. Bulletin 147.

Issued by the U. S. Department of the Interior, Bureau of Education:

Educational Work of the Boy Scouts. Bulletin No. 41.

Educational Work of the Girl Scouts. Bulletin No. 46.

Issued by the U. S. Department of Labor, Children's Bureau:

Infant Care. Care of Children Series No. 2, Bureau Publication No. 8 (Revised)

Ninth Annual Report of the Chief, Children's Bureau to the Secretary of Labor.

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How Women in Industry. Bulletin of the Women's Bureau, No. 19.

Standards for the Employment of Women in Industry. Bulletin No. 3.

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Issued by the U. S. Department of Labor, Bureau of Naturalization:

Suggestions for Americanization Work Among Foreign-Born Women.

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What's What in Textiles. By Julia Tear. College Bull. No. 89.

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NEWS FROM THE FIELD

THE HOME ECONOMICS SPECIAL

Chicago to Corvallis, July 26-31, 1922

Annual Meeting, August 1-5, 1922

Summer Tourist round trip fare, Chicago to Portland.....	\$86.00
Lower berth, Chicago to Portland, as per schedule.....	24.75
Approximate expense of meals in dining car en route.....	12.00
The complete two-day tour in Glacier Park.....	26.25

Total.....	\$149.00
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The upper berth rate, Chicago to Portland.....	\$19.80
Drawing room, accommodating three to five people.....	87.00
Compartment, accommodating two to four people.....	69.50
Railroad fare Portland to Corvallis (one-way).....	3.17

Round trip fare, Chicago to Portland, returning via California..... \$104.00

The route from Chicago is via the C. B. & Q. to St. Paul and the Great Northern, St. Paul to Portland. Members should make sure that tickets read accordingly, as this is the route of our *Special Train*. Tickets may be purchased at any point.

Schedule. Leave Chicago 10 a.m. July 26; leave St. Paul 10:45 p.m. same day; arrive Glacier Park 8 a.m. July 28; leave Glacier Park 8 p.m. July 29; arrive Portland 7:45 a.m. July 31. The full schedule appeared on page 152 of the March JOURNAL.

The departure from Chicago, 10:00 a.m., will allow ample time for members coming from the south and southeast to make connections at Chicago. Members from Kansas City and adjacent points, from St. Louis and points south should have their tickets routed via their direct line to St. Paul, and the Great Northern to Portland. They should arrange to arrive in St. Paul in ample time to connect with our *Special Train*, leaving St. Paul at 10:45 p.m. July 26. Those who cannot join the special should arrive in Portland in time for the tour of the city starting 9:30 a.m., July 31.

Return Routes. The return routes must be definitely decided upon before purchasing round trip tickets. Stopovers are permitted at all points on the return trip. Application for stopover is made to the conductor of the train. Railroads will arrange for special cars where a sufficient number wish to return by the same route. The Great Northern and the Northern Pacific are the lines between Corvallis and Portland. From Portland, one may have the choice of the following routes:

1. S. P. & S. to Spokane via north bank of Columbia River, Northern Pacific to St. Paul, Burlington Route to Chicago; or, from Spokane, the Northern Pacific to Billings, Burlington to Chicago via Denver, with free side trip to Colorado Springs, if desired.

2. Union Pacific to Ogden, D. & R. G. via Salt Lake City through the Royal Gorge, the Canyon of the Grand, and Colorado Springs to Denver, Burlington Route to Chicago. Side trip may be made from Salt Lake City or Ogden to Yellowstone Park in connection with the above route.

3. Canadian Pacific S. S. Co. to Victoria, thence Vancouver, Canadian Pacific, M. St. P. & S. S. M. to St. Paul through Canadian Rockies, Burlington Route to Chicago.

4. Southern Pacific to San Francisco, Western Pacific to Salt Lake City through Feather River Canyon, D. & R. G. through the Royal Gorge, the Canyon of the Grand, and Colorado Springs to Denver, C. B. & Q. to Chicago; or, from San Francisco, Southern Pacific to Los Angeles, Union Pacific to Salt Lake City, D. & R. G. through the Royal Gorge, Canyon of the Grand, and Colorado Springs to Denver, C. B. & Q. to Chicago; or, from Los Angeles, Santa Fe to Chicago. If Grand Canyon side trip is desired, on the return trip via the Santa Fe, add \$9.12.

Note: Tickets reading C. B. & Q. Denver to Chicago, are honored either via Omaha or Kansas City to Chicago.

5. "Columbia River Route"—Direct from Portland to Chicago, via Union Pacific System and C. & N. W. through Hood River, Pocatello, Cheyenne, Omaha. Side trip may be made from Pocatello to Yellowstone Park.

6. "Overland Limited Route"—Southern Pacific to San Francisco. From San Francisco direct to Chicago, via Southern Pacific, Union Pacific and C. & N. W., through Reno, Ogden, Cheyenne, and Omaha.

7. "Los Angeles Limited Route"—S. P. to Los Angeles. From Los Angeles direct to Chicago, via Union Pacific, C. & N. W. through Salt Lake City, Ogden, Cheyenne, and Omaha.

Note: On any of the above routes, tickets can be purchased to return from Ogden via D. & R. G. through Salt Lake City, Glenwood Springs, Colorado Springs, Denver, thence to Chicago via Union Pacific and C. & N. W. or via Kansas City and C. M. & St. P. at the same rate.

8. O.-W. R. & N. to Seattle, Seattle to Chicago, C. M. & St. P. via the famous Olympian train which for 649 miles is handled by electric locomotives.

9. Union Pacific, Great Northern, or Northern Pacific, to Seattle, Seattle to Victoria via C. P. R. Princess Steamer, Victoria to Lake Louise and Banff, through Canadian Rockies; thence to Minneapolis; Minneapolis to Chicago via the Soo Line. There are three variations of this trip with different stopovers from which to choose.

10. S. P. to Los Angeles, Los Angeles to Chicago on the California Limited of the Atchison, Topeka, and Santa Fe with a schedule arranged for a twelve hour day-light stopover at Grand Canyon.

Detailed itineraries of any of these routes will be sent upon request.

Do not hesitate about making plans to go because you "hate to go alone." You will become acquainted as soon as you are on the train, as each car will have a hostess—your car might have one from the starting point.

Assignments in cars will be made in the order in which requests for reservations are received. Return postal cards will be sent for this purpose to all members of the Association. Others may make their reservations by communicating directly with Nina Streeter, Chairman Travel Committee, 1370 East 54th Street, Chicago, Ill.

ALABAMA

The County Home Demonstration Agents of Alabama spent the month of January in special training at the Alabama Polytechnic Institute, Auburn, under the instruction of Helen Green, Head of the Home Economics Department. The course of study was largely of the productive nature, but so far as was practical other divisions of the work

were covered. Aside from their work in home economics they took special training in horticulture, poultry, auto mechanics, and beekeeping.

This was the longest course of special training ever provided for the home demonstration agents of Alabama. Incidentally, this is the first year for the Alabama Polytechnic Institute to have a Department of Home Economics.

CONNECTICUT

The Connecticut Home Economics Association held its annual meeting Saturday, February 4, 1922, at the New Haven High School. After an address by Dr. David Snedden and the discussion of affiliation led by Agnes Craig, a luncheon was served at the Business and Professional Woman's Club. The afternoon program was as follows: Clothing Discussion led by Mrs. Bessie Birdsall, Connecticut Agricultural College; Nutrition Program, Mrs. Amy D. Storer, American Red Cross; Foods for the Foreign Born, Bertha Wood, Boston Dispensary.

ILLINOIS

Child Health Class. The Health Class for children has become a regular part of the summer program of the Home Economics Department of the University of Chicago. For the past two summers a group of underweight children has served as a demonstration class for teaching home economics students and teachers how to conduct nutrition classes for children. This year in addition to this usual course, a special course dealing with nutrition in the public school program will be offered for superintendents, principals, and teachers in connection with this Health Class.

IOWA

The Des Moines Salary Schedule. For the purpose of attracting strong, capable people in the teaching profession, Des Moines, Iowa, has advanced a salary schedule of much interest.

The plan provides for four classifications based upon training and experience. It also affords a definite annual increment for each classification. With an approved, full-time teaching experience of two years, the minimum salary paid to teachers in Class I is \$1200. The maximum in Class IV covering a period of ten years teaching experience with five years of preparation is \$3000. Not more than five years of full-time teaching experience commensurate with the Des Moines standard may be accepted on initial

appointment. Some of the outstanding features are the recognition of professional study whereby, with each added year of study, one may raise his classification to his financial benefit, and equal salary for equal qualifications, irrespective of grade or school.

All teachers of Home Economics interested in advancement should write for detailed information concerning the plan.

MICHIGAN

The Ellen H. Richards Club of Southeastern High School, Detroit, has had a very busy season. The initial feature of an extensive program was a mass meeting held in the school auditorium, in December, in honor of Mrs. Richards' Birthday. All girls of the ninth, tenth, and eleventh grades were invited to attend. Talks by various members of the Club were followed by an address by Grace McAdam, Supervisor of Home Economics in the Detroit Public Schools, on the life of Mrs. Richards, and the benefits of home economics. This mass meeting aroused a great interest among the girls of the school, and many enrolled in the home science course for the following semester.

A few weeks later the Ellen H. Richards Club, with the cooperation of all the clubs in the school, arranged to have Mrs. Emma A. Fox, Michigan parliamentarian, give a talk on Parliamentary Usage. Tea was served in the Ellen H. Richards dining room.

The club is now organizing a Federation comprised of two members from each club in the school for the purpose of maintaining closer relationship and coordinating various activities for the good of the school.

The Dietetic Association of Southeastern Michigan held a dinner on March 2 at the College Club, Detroit. Rena S. Eckman of the University Hospital, Ann Arbor, gave a paper on "The Responsibilities of the Dietitian." Miss Eckman emphasized particularly the responsibility of the dietitian to her profession as well as to the institution with which she is associated.

Recent publications and books were shown and discussed by Miss Wilson of Cass Technical High School, Detroit.

The next meeting will be the annual election of officers.

MONTANA

The Montana Home Economics Association held its second annual meeting at Great Falls. The Montana association with a membership of sixty-six was the second state organization to affiliate with the American Home Economics Association. The association pledged \$100 toward the executive secretary fund. Blanche Lee, Assistant State Leader of Home Demonstration Agents, was elected Montana representative on the National Council. Gladys Brangan's term as president of the State Association continues for another year, and the membership goal for this year is one hundred.

Mildred Weigley on her recent trip in the interests of the American Home Economics Association visited the Home Economics Departments at Montana University and Montana State College. She met a representative group of home economics workers and students in both places.

Isabel Bevier was the chief speaker on the women's program of the State Farmers' and Homemakers' Conference held at the Montana State College, the second week in January.

NEW YORK

The Home Economics Association of Greater New York held its March meeting in conjunction with the New York Dietitians Association. The program, arranged by the institutional group, consisted of discussions on various institutional subjects by Mary Lindsley, who presided, Mrs. Katherine Ogden, Margaret Proctor, and Mrs. Bryan.

Auburn Home Economics Teachers. A local group of home economics teachers have been meeting together twice a year for three years, either at Auburn or Syracuse and have invited all interested home economics workers from nearby towns. These meetings have been most helpful to the workers who are more or less isolated from others doing the same work. A chairman

is appointed at each meeting who names a committee for the next. A ten cent tax is collected to defray expenses.

The gatherings usually take the form of an experience meeting around a long table. February third the meeting was held in the Vocational High School, Syracuse. Our newly appointed State Supervisor, Emma Conley, gave an informal talk. Edith Barber, Home Bureau agent of Syracuse, told about the work being done by the Bureau in Syracuse.

Clothing for Unemployed. During the past year, girls in the Washington Irving, Julia Richman, and Wadleigh High Schools, N. Y. City, have made 2600 articles of clothing for the children of unemployed ex-service men. The work has been done under the direction of the New York County Chapter of the Red Cross.

A Course in Family Social Work for Teachers of Household Arts is offered by the School of Practical Arts of Teachers College, June 5 to 30, 1922 for selected women with training in household arts. Application for admission must be made to Miss Harriet Townsend, Teachers College, before May 5.

Annual Alumni Reunion at Teachers College. The alumni of Teachers College held their annual reunion and conferences at the college February 10 and 11. The keynote of the meeting was "citizenship," and each section included in its programs a discussion of its work in citizen making.

The Household Arts Section took for its first meeting the topic, *Some Problems of the Housewife*. Under the chairmanship of Dr. Andrews the problems were discussed by May Van Arsdale, Dr. Hugh Hartshorne, Mrs. Henry S. Patterson, and ten housewives. It is hoped that by having one special meeting for the housewives the married alumnae will return to give their experiences and to make suggestions as to how the college can be of help to them.

The evening meeting under the chairmanship of Anna M. Cooley had as its general topic, *Recent Investigations in the Field of Household Arts*. Dr. Minna C. Denton, of the Office of Home Economics U. S. Dept. of Agriculture reported current research

throughout the country. Each department of the school of practical arts told of researches being conducted in Teachers College. Ruth Wilmot, formerly an instructor at the college and now connected with a New York department store discussed the relation of art to daily life. Dr. M. R. Trabue outlined the development of educational measurements.

The topic for the final meeting, Home Economics and Citizenship, was discussed by Dr. Maurice A. Bigelow, Director of the School of Practical Arts, Teachers College; Dr. Albert Shiels, Assistant Director of the Field Studies Division, Institute of Educational Research, Teachers College; Philip W. L. Cox, Headmaster, The Washington School of New York; and Esther Jonas, Instructor in Home Economics, Junior High School, Washington, D. C.

TEXAS

The College of Industrial Arts, the State College for Women, at Denton, Texas, is offering special courses in home economics during its summer quarter June 6 to August 25. Margaret Gleason, B.S. University of Chicago, and M.A. University of California, is the director of the home economics department, which has a faculty of 22 and gives instruction to more than 1200 students annually.

UTAH

Home Economics Workers in Utah will not soon forget the delightful visit they had with Mildred Weigley in December. Miss Weigley addressed a meeting of the women of the University of Utah, Salt Lake City, a group of teachers at the L.D.S. University in the same city, and the home economics faculty and student body at the College of Agriculture, Logan.

Two distinct benefits attach to Miss Weigley's visit. First, the coming of this council member of the American Home Economics Association gave that organization a personality and thus formed a vital beginning of the acquaintance of Utah students with their national professional organization. Second, Miss Weigley's comprehensive presentation of the organization's character, its recognition by other organizations,

opportunities for growth and service especially through the proper emphasis upon home making as a profession and the enlistment of the interest and support of the home makers along with that of home economics workers in other fields, stimulated interest in the cause of the Association among the people of Utah.

THE UNITED STATES DEPARTMENT OF AGRICULTURE

The Coöperative Extension Work in agriculture and home economics, formerly conducted through two extension offices, one for 15 Southern States and the other for 33 Northern and Western States, is now under the direction of one office. For the coming year the county agent activities, home demonstration work, and club work with farm boys and girls will all be part of a unified program.

Depressed economic conditions in the southern states lead the 861 white county agents and the 154 negro agents to give an unusual amount of time to marketing problems, assisting in the organization of 2,031 coöperative associations for buying and selling. These agents reported 230,819 field demonstrations with crops by adult farmers and boys on 2,274,534 acres. The home-demonstration workers employed in 567 counties reported that, due to the work of 240,000 club girls and women, over 14,000,000 pounds of meat products were cured, 228,500 cans of meat were conserved, and 14,500,000 quarts of vegetables and fruits were canned, besides a large quantity of jelly and other preserves, and dried and brined products. Poultry and eggs valued at \$2,500,000 were produced, and over 3,000 family cows were placed on farms.

In the northern and western states home demonstration projects were conducted in 17,399 communities, and over 1,330,000 people were reached. The total enrollment in boys' and girls' club work was 216,479. The agricultural colleges offered 730 scholarships and conducted short courses for 3,383 boys and girls. Significant of the way in which club work stimulates a desire for more instruction is the fact that over

1,800 former club members were enrolled during 1920 in the four-year courses in agriculture or home economics at various agricultural colleges.

The Office of Home Economics has increased its experimental work on food value and selection, meal planning, food requirements of children, cooking and canning processes, and relative efficiency of different fuels in food preparation. Some studies were also made on the selection, repair, and care of clothing and household equipment.

The Experiment Stations in Alaska and the insular possessions have continued the work for diversification of agriculture in their respective territories.

NOTES

Inga M. K. Allison, Head of the Department of Home Economics, Colorado State Agricultural College, has been appointed Acting Supervisor of Vocational Home Economics for the state.

Mrs. Bessie W. Birdsall, formerly of Kansas State College, is Head of the Department of Clothing and Textiles at the Connecticut Agricultural College.

Marion Butters, formerly Assistant State Leader in New Hampshire, has been appointed State Home Demonstration Leader, New Brunswick, New Jersey.

Mrs. Henrietta W. Calvin, Specialist in Home Economics, Bureau of Education, has been conducting a series of conferences for home economics city supervisors and teachers in Spokane, Portland, San Francisco, Los Angeles, and Salt Lake City. Others will be held in Denver May 5 and 6, and Kansas City, Mo., May 12 and 13.

Esther Deutch (1921 Iowa State College) has been appointed assistant manager of the new cafeteria in the Hotel Statler in Cleveland.

Jean MacKinnon has accepted a position as Head of the Department of Foods and Cookery at the Connecticut Agricultural College.

Ella Rose, formerly Head of the Foods and Cookery Department at the Connecticut

Agricultural College, has been made supervisor of Smith-Hughes teacher training work and instructor in Smith-Hughes methods in teacher-training at the College.

Miss Roudelbush, Director of the Department of Home Economics, State Teachers College, Greeley, Colorado, has been elected President of the Home Economics Section of the State Teachers Association.

Anna Williams, formerly of the University of Illinois, is now in charge of the Home Economics work at Colorado State University.

FOREIGN

The American Women's Hospitals, organized by the Medical Women's National Association in the early part of the war, have done remarkable work in the war stricken countries as indicated in the following summary:

France. Three hospital centers, with dispensaries, out-patient dental service conducted in the war zone prior and subsequent to the Armistice. Over 22,000 sick people cared for; between 800 and 900 surgical operations performed; helped establish permanent maternity hospital at Blois and permanent dispensary at Levallois-Perret.

Serbia. Five hospital centers conducted in Serbia during the last two years. Training classes for Serbian nurses maintained; over 90,000 consultations recorded; a large number of surgical operations performed; eye clinics conducted; over four hundred neglected cases of cataract operated upon and sight restored to people who had been blind for years.

Asia Minor. All hospital, dispensary, medical, and surgical work in the Derindje, Bardizag, and Ismid regions for the past year—general hospital, children's hospital, trachoma hospital, small-pox and tuberculosis camps with training classes for native nurses. This district was the recent battlefield of the Greeks and the Kemalists.

Russian Caucasus. Children's hospital, general hospital, trachoma hospital, and a hospital for skin diseases, all overcrowded.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE Journal of Home Economics

VOL. XIV

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No. 6

THE PRESENT STATUS OF HOME ECONOMICS EDUCATION

FLORENCE WILLIAMS

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In the recent progress of home economics education there have been two general lines of development which are worthy of attention: first, the scientific measurement of results; second, a noticeable tendency to reorganize the home economics course of study from a wholly educational point of view.

The movement for the scientific measurement of results in education has become an established and recognized thing. Discussions of the value and need of scientific measurement have been many in educational writings. Scientific measurement has been applied to many subjects and more recently to the "special" subjects. Until two years ago there was no attempt to apply scientific measurement to home economics. Since that time, two accounts of attempts at quantitative measurement in clothing and textiles have been published. In 1919, Dr. Katherine Murdoch published the results of an investigation in hand sewing, "The Measurement of Certain Elements in Hand Sewing." This includes a scale for measuring six stitches: hemming, basting, running, backstitch, overcasting, and combination stitch. There were 854 samplers used in the construction of the scale. Fifteen different qualities were determined by careful mathematical calculation. Numerical values were determined mathematically for each of these fifteen qualities. This piece of work marks a definite step toward the measurement of results in the teaching of sewing.

In 1920, a report of certain investigations carried on by the Home Economics Department at the University of Chicago were published in a monograph, "Home Economics in American Schools." This includes a scale for the measurement of ability in machine sewing. The scale consists of photographic reproductions of samples of machine-made hems and French seams. The scale is analytic in character. Five factors which contribute to a well-made hem or a French seam are

considered separately: tension, length of stitch, neatness, spacing, and constructive elements. Three qualities for each of these five factors are shown in the scale, and each quality has a numerical value. It is assumed that the average score for the five factors is the score for general merit. This report also includes a table showing each possible score translated into school marks.

Other work in the scientific measurement of results in home economics education is being carried on at the present time. A scale for judging buttonholes is being worked out by the Bureau of Educational Measurements and Hazel K. Stiebling, Department of Home Economics, Kansas State Normal School. Accompanying the scale, there will be a diagnostic chart. This consists of a group of nine buttonholes, each of which is satisfactory, except for the conspicuous lack of one element necessary to a good buttonhole. By comparing a buttonhole with the chart, a pupil can readily see where to give attention in order to improve her workmanship.¹

Rosamond C. Cook, Iowa State College, is making a similar investigation, the purpose of which is, in part, to make a scale for ability in using one sewing machine attachment, the tucker.

It will be noted that these are attempts to measure skills required in clothing construction. It is simpler to measure skill in hand and machine sewing than in the other abilities involved in home economics education. Skill may be measured more accurately than the acquisition of information, appreciations, or problem-solving abilities because of the objective results obtained. Certain skills are required in cooking as well as in sewing. Unfortunately from the nature of the result, it is impossible to construct a scale to judge cooking. Very obviously it would not be practical to construct a permanent scale of food stuffs. However, in time, some scheme may be devised by which skill in cooking can be measured.

The investigation described in "Home Economics in American Schools" includes an attempt to measure the acquisition of information in textiles and clothing construction and reasoning ability in textiles, dress design, sewing, and house planning. The work was in a preliminary stage, but the report shows the possibility of developing other tests, and such tests will undoubtedly be designed.

The second noticeable change in home economics education is the tendency to reorganize the course of study from the educational point

¹ Both the chart and scale will be available shortly from the Bureau of Educational Measurements, Kansas State Normal School, Emporia, Kansas.

of view. This is by no means a new movement, but within the past year it has received fresh attention. Indications of this new interest in the course of study are found in the writings of home economics workers and in the addresses given at professional gatherings.

At the meeting of the American Home Economics Association, February, 1921, Mrs. Calvin emphasized the fact that we must make home economics teaching function in the life of the girl to show her how to control her environment. Mrs. Allan, a high school principal, said: "Our girls do not need advanced cooking and sewing but they need great emphasis on the social side of the home, on appearance. . . . The economics of buying appeals to girls. They all buy clothes, rugs, china, and pictures, and know nothing about any of them. Why do we leave them to buy at the mercy of fashion?" The following questions were subjects for round table discussion at the Indiana Home Economics Association meeting. "Is it possible to find a body of subject matter which will be equally useful to all types of a high school group? Is the first year the best place in the curriculum for a required course? What is necessary to give the girls the type of training which they will require for their own immediate needs?" These and other questions and statements, made by educational administrators and home economics leaders, indicate the tendency to investigate the content of the home economics course.

Other indications of the tendency to reorganize the content of the home economics course are the changes in many elementary school cooking courses of study. Formerly, the emphasis was upon skill in cooking and upon the acquiring of information. The present tendency is to emphasize the relation of food to health. The *Elementary School Journal*, Nov., 1921, published an article "Methods of Health Instruction in the Second and Third Grades," by Carolyn Hoefer. The article discusses the health principles to be taught and recommendations for teaching health principles and measuring the results. Many health habits are discussed, but the importance of proper food is emphasized. Bailey B. Burritt, in "The Place of the Nutrition Worker in the Health Program," *Journal of Home Economics*, December, 1921, says: "We have made much progress, it is true, in the use which we have made of our elementary schools in the nutritional educational problem. A larger percentage of the children graduating from our schools each year are knowing at least something about the elements of food problems—What to eat, how to eat, how to prepare it." "The nutritional factor is a large and essential factor in the public health program. It has not

yet received the recognition, however, in practice, which its importance suggests. Its chief obstacle to overcome is ignorance and its function is, therefore, largely educational. The school, including the elementary school, the secondary school, the college, and the university, is or can be the most important instrument for overcoming universal ignorance."

In the *Elementary School Journal*, October 1921, Maud A. Brown described the health program in Kansas City Schools. The plan was devised and carried on by the Physical Education Department, yet in part, at least, the work can be classed as home economics education. "The informal discussion of the weight findings and the friendly coöperative search for the causes of underweight turned every class into a nutrition class."

In conclusion, first, it is evident that the movement for the scientific measurement of results in home economics education is established. Attempts at the construction of standardized scales and tests have been published and are being carried on at present. Secondly, home economics workers are critically scrutinizing the content of the home economics course of study. Changes in emphasis of instruction are apparent. Such topics as the economics of buying and nutrition are receiving more attention in many schools.

THE GREAT NEED FOR INFORMATION ON RACIAL DIETARY CUSTOMS

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In psychology the student learns that she must approach her subject from the known to the unknown. But when a nutrition worker comes face to face with an Armenian, a Syrian, a Polish, a Lithuanian, an Italian, or a Jewish family, she realizes, perhaps for the first time, that she does not always know what "the known" is. On the other hand the foreign born woman who has seen a race survive on "the known" does not see why she should change the customs of centuries to suit the whim of a youthful person who does not know what her perfectly good food habits are. The woman is right and the young worker is "up

against it," so to speak. There is little in the literature about the food habits of various people, very little has been given her in any of her college courses concerning the adequacy or deficiencies of food value of these various diets, and there seems to be nobody to whom she can turn for assistance.

Each person going into social work has had to learn through experience but it is unfortunate that very little of this experience has been passed on to benefit those coming after. The chief difficulty is that worth while material takes time. Such material is valuable if written up as facts by those who have worked with certain races for a long time or by one who has made a very careful study of the food value of the diet. Mae Allison left a very brave beginning of a study of food value of racial diets, a report of which was prepared by Velma Phillips and Laura Howell.¹ This piece of work has set a high standard for those who want to contribute more to the literature on the subject. While the Social Work Committee of the A. D. A. felt the need of more information on racial diets and while they would like to follow Miss Allison's lead, they realized that already busy workers would not have time for such a careful study. They did persuade several people, however, to contribute from their experiences.

Four papers on five different racial groups were presented at the October (1921) meeting of the Association: Mrs. Mary Schapiro, formerly of the United Hebrew Charities in New York City, Jewish Diets; Reba Reed of the Association for Improving the Condition of the Poor, New York City, Italian Dietary Customs; Mildred Newell, Brockton Red Cross, Lithuanian Diet; Fairfax Proudfit, Memphis, Tenn., Mountain White and Negro Dietary Habits.

The food value of diets was not worked out because of lack of time. The aim throughout was to study the common customs from the standpoint of good points or deficiencies especially with regard to the nutrition of children. The good points have been emphasized so that a new worker may have "a known" from which to work, and the undesirable points have been stated so that she may know what to advise against. The type of family studied has been the one in which economy is a big factor. It is very important to know what the family will sacrifice first when they have to economize. These papers are summarized on page 261.

Such a summary cannot give a clear picture of all the variations in any diet. The diet will, of course, vary decidedly with the financial

¹ Racial and Other Differences in Dietary Customs, *Jour. Home Econ.*, September, 1920.

condition of the family. With most nationalities, when no financial limitations exist, the diet is likely to contain too much protein and to be too rich and hearty and too highly seasoned. Those who have to economize usually sacrifice on milk, fruit, and vegetables. To them these foods are luxuries or non-essentials. The Jewish people will almost always sacrifice quantity for freshness, preferring to buy 1 pound of fish just from the water at 40 cents a pound rather than pay 40 cents for two pounds a few hours later. An Italian prefers one fourth of a pound of Italian cheese to one pound of American cheese for the same expenditure of money.

When the stranger from another country arrives, he has to make many adjustments and if he does not know our foods and cannot get the foods to which he has been accustomed, he often acquires abnormal tastes. The diet of the Italian in his own country is very well balanced. A taste for meat and sweets is acquired in this country. They have milk, cheese, fruit, and vegetables in abundance in Italy but these foods seem expensive here and milk is omitted and cheese and greens used for flavoring to a large extent.

When the dietary laws² of the Jewish people are not interfered with their diet is more or less international, varying with the habits and produce of the country from which they come.

As we study the habits of the various races, we are impressed with the importance of attention to the diet of the pre-school child. We find the Italian baby eating bread soaked in coffee as soon as he can chew solid food, and the negro baby, too young to sit up without being propped with a pillow, clutching a piece of cornbread in one hand and a piece of fat meat in the other, while on its face linger evidences of molasses. When we see such customs as these, there is small wonder at the large number of school children who are undernourished. We wonder that they live to be in school at all and we feel more and more convinced that the teaching of nutrition should be begun for the child before he is of school age. For the time being, social agencies cannot escape their responsibility in the question of the nutrition of the children.

² Previously given by Mrs. Schapiro before the A. D. A. at Cincinnati in 1919. See also *Jour. Home Econ.*, February, 1919.

	ITALIAN	JEWISH	LITHUANIAN	NEGRO
Striking characteristics (both desirable and undesirable)	<p>Little meat</p> <p>Large amount cheese and beans</p> <p>Goat's milk in their own country—slow to use cow's milk here</p> <p>Generous quantity of leafy vegetables, except when extreme economy is a factor</p> <p>Few root vegetables or potatoes</p> <p>Fruit if can be afforded</p> <p>Oil—often a gallon a month</p> <p>Much bread and macaroni—often 4-8 lbs. bread, and 1 lb. macaroni daily</p> <p>Strong prejudice against oatmeal and American cheese or oil</p> <p>Much fried food</p> <p>Taste for sweets acquired here</p>	<p>Moderate amount of fresh meat and fresh water fish.</p> <p>Large amount of smoked, salted, spiced beef, tongue, or fish</p> <p>Moderate amount of milk, cheese, and eggs</p> <p>Large quantity of legumes, potatoes, carrots, and onions. Sorrel, beets, or beet greens in soup. Very few other green or fresh vegetables. Dried mushrooms</p> <p>Dried fruit, preserves, and preserves used freely.</p> <p>Fresh fruit between meals.</p> <p>White or rye bread and rolls.</p> <p>Coarse cereals in soup.</p> <p>Sour salts in soup</p> <p>Sour cream and sweet butter.</p> <p>Very little fried food. Foods generally over-seasoned, over rich, over sharp, or over concentrated</p>	<p>Chief foods:</p> <p>Smoked or salted meat or fish (often 4 lbs. a day)</p> <p>Sour milk, buttermilk</p> <p>Sour salts in soup and pickles</p> <p>Beets, tomatoes, onions (fried), potatoes</p> <p>Few green vegetables or cereals</p> <p>Considerable fruit</p> <p>Moderate amount of fat and sugar</p> <p>Rye bread</p>	<p>Chief foods:</p> <p>Pork</p> <p>Cornbread (often 3 times a day)</p> <p>Molasses</p> <p>Cabbage and turnip greens</p> <p>Lard or bacon drippings</p> <p>Potatoes—sweet and white (always fried)</p> <p>Buttermilk in soda biscuits</p> <p>Butter substitutes</p> <p>Little milk</p> <p>Melons</p>
Probable deficiencies	Calcium and vitamins	Iron and vitamins. In cases of financial pressure also calcium	Iron and vitamins	Calcium and vitamins
One common dish	Beans, macaroni, tomato sauce, and oil	Gedemphe fleisch (pot roast made of brisket). Meat soaked according to dietary laws. Cooked with onions and seasoning in very small amount of water (in iron pot) for about 3 hours. Potatoes added one hour before time to serve	Beef and pork, chopped fine, enclosed in a ball of dough 1 inch thick and boiled in salted water or soup 15 minutes	Cush—left over cornbread (soaked in water in which greens were cooked) fried with onions in pork fat
Typical meals:				
Breakfast	White bread and coffee	White bread or rolls, sweet butter, eggs or herring, potatoes, coffee. Milk for babies	Rye bread and coffee	Only two meals a day, and these whenever spirit moves
Midday meal	Bread, fried peppers, eggs, ham, or potatoes	Smoked salmon, rye bread and butter, tea. (From the delicatessens)	Soup, meat, potatoes, sauerkraut (or other sour food), rye bread, coffee or tea	Fried pork, rice, soda biscuit, coffee
Evening meal	Macaroni, beans, tomato sauce, oil	Barley and mushroom soup, Gedemphe fleisch and potatoes, pickles or grated horse-radish, rye bread, tea. Compote of dried fruit, sometimes cake made without butter or milk	Meat, bread, tomatoes (perhaps cake, canned fruit), tea	Greens, salt meat, cornbread, sweet potatoes, buttermilk

EFFECT OF BLEACHING ON TENSILE STRENGTH OF COTTON FABRICS¹

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No record of the origin of bleaching exists, but the process has gradually developed until we have the modern bleaching methods which are a result of many empirical experiments with lime, soda, potash, bleaching powders and acids, and oxidizing agents of various strengths.

Our present process for the application of bleaching powder dates from about 1840, and is known as the American process. It consists in boiling in large kiers with or without pressure in a series of alkaline solutions, (1) bleaching powder solutions, and weak acids.

Perborate is a bleaching agent that has come into recent use as a bleach and also as a spot remover. It has been developed in an attempt to secure a per-salt which could satisfactorily be used as a source of oxygen in bleaching. Many compounds have been prepared with this object in view, among the most successful being the per-salts formed by the alkaline earth metals, especially sodium perborate.

In many instances it will be noted that the strengths of the sours, alkali, and chemic as published are stated in terms of specific gravity but, since bleaching powders differ in the amount of available chlorine, and the same sample shows deterioration on standing, density is no criterion of strength. Since the oxidizing action of bleaching solutions is directly proportionate to the available chlorine, this, rather than the specific gravity, should be our standard for strength of bleaching solutions. Titration methods are being used in many mills today to determine this strength, arsenious acid or sodium thiosulfate being used to measure the available oxidizing agent.

Directions for the use of bleaching solutions of a definite chlorometric strength were published in 1901 by the French chemical engineer L. Tailfer (2). This author expresses the strength of bleaching solutions in terms of chlorometric degrees, which means the liters of active chlorine contained in a liter of chemic. The chlorometric degree of chloride of lime varies between 100 and 110. This means that one kilogram of chloride of lime can decolorize or bleach to the same extent as 100 to 110 liters of active chlorine under standard conditions.

Chlorine exists in two different states in bleaching powder. One part is in a state of combination which renders it as effective for bleaching purposes as gaseous chlorine dissolved in water. This is the active or available chlorine and comes from the hypochlorite of sodium or calcium. We also have chlorine which is combined with the sodium or calcium as a chloride, from which there

¹ See Recent Developments in Scouring and Bleaching of Cotton by Lillian B. Storms in the May issue of the Journal.

is no available chlorine. The formula CaOCl_2 is used by some authors, and others prefer that of a molecular complex of calcium chloride and calcium hypochlorite, $\text{CaCl}_2 \cdot \text{Ca}(\text{OCl})_2$.

It is quite possible that oxidation is not produced by chlorine alone, for the oxygen of the hypochlorite may oxidize directly. By the term chlorometric degree we therefore represent an oxidizing effect which would be equivalent to that produced by a liter of active chlorine. We are speaking in terms of the effective strength of the solution, which is in no sense true when we speak in terms of specific gravity.

Perborates, although very effective as bleaching agents and spot removers, have not replaced bleaching powder because of their cost. Little is said of their preparation or methods of application in the literature.

When solutions of sodium peroxide and boric acid are combined at a low temperature the resultant compound is perborax (3) a substance of the formula $\text{Na}_2\text{B}_4\text{O}_8 \cdot 10\text{H}_2\text{O}$. Perborax is soluble in water to the extent of 42 grams per liter at 10°C . When half of its sodium is replaced by mineral acid a crystalline precipitate of sodium perborate $\text{NaBO}_3 \cdot 4\text{H}_2\text{O}$ separates. This rather stable compound dissolves with slight decomposition at 60° and evolves oxygen vigorously at 100° .

The simplest method of perborax bleaching is to boil in an open kier with about a one per cent solution of $\text{NaBO}_3 \cdot 4\text{H}_2\text{O}$. In such a process the rate of evolution of oxygen is difficult to control; and so various modifications have been made, both in the method of application and in the compound itself.

R. Starek (4) has patented a method of application which decreases the amount of perborate necessary. Heretofore bleaching with perborate has been more costly than with chloride of lime because, by heating, too great a per cent of oxygen was lost. By this method the material is alternately washed in perborate solution and steamed. The oxygen is not lost, as the bleaching solution is not boiled, and the oxygen is freed on the fiber where it exerts an intensive action.

The evolution of oxygen in the bleaching solution may be regulated by the formation of a salt of the alkaline earth metals which retards the evolution of oxygen. F. S. Schmidt (5) has patented such a compound which is prepared by mixing the sodium perborate with from two to ten per cent of a molecular proportion of magnesium, strontium, or calcium salt to retard the decomposition of the perborate on boiling.

O. Liebnicht (6) has patented a stable compound to which he gives the formula $\text{Na}_2\text{O} \cdot \text{MgO} \cdot \text{B}_2\text{O}_3 \cdot \text{CO}_2 \cdot \text{O}_2 \cdot 9\text{H}_2\text{O}$, which may be obtained by adding 64 parts of Na_2O_2 to 900 parts of H_2O , keeping the solution cool to avoid excessive loss of oxygen, then adding 80 parts of borax and 84 parts of MgCl_2 and treating with CO_2 till the liquid decolorizes only ten to twenty per cent of its volume of acidified normal KMnO_4 . The white solid which settles out is a very effective bleach.

Bleaching, however accomplished, is an action of oxidation on cotton cellulose itself or on its impurities. Cotton cellulose is a colloid (7) whose constitutional formula is, at present, unknown. Hibbert (8) believes that experimental data would indicate that cellulose is an anhydride of dextrose formed by the removal of the aldol oxygen with the hydrogen from the delta and from the gamma carbon, but until we know definitely the physical and chemical nature of the fiber the action of the bleach will be uncertain.

A successfully bleached fabric must not only be white but must not be appreciably weakened. Bleaching according to most authorities exerts a weakening effect due to the formation of oxycellulose by the chlorine and oxygen, and hydrocellulose by the acid. Bradford Technical College (9) has shown that the processes of scouring, crabbing, and permanent finishing are responsible for an appreciable loss in tensile strength.

O'Neil, according to Hübner (1), claims that bleaching, if properly done, increases tensile strength. Work done by Moore, of the Manchester School of Technology (10), on cotton yarns gave the following results:

SAMPLE	STRENGTH OF BLEACH IN GRAMS OF CHLORINE PER LITER	TENSILE STRENGTH
A	15.5	10.97
B	10.2	11.77
C	7.65	12.50
D	3.83	12.50
E	2.55	14.47
F	1.53	12.82
G		13.61

He regarded (E) as an abnormal value, even though it was checked by further experiment, and attributed it to some difference in the fiber although every effort had been made to secure uniform samples. Later work at the same Institute (11) indicates that they feel this rise is characteristic of the effect of bleaching on yarns, even though it is contrary to popular opinion.

The change in tensile strength is doubtless due to the formation of oxycellulose. Moore (10) found that the relative amount of oxycellulose could be measured by the amount of methylene blue absorbed by the fiber, for oxycellulose has a greater affinity for this dye than the unoxidized fiber. He finds the amount of oxycellulose indicated by this test to be directly proportional to the amount of bleach used.

R. Starek (12) states "Most of the customary bleaches attack strength. Perborate, however, does not. It also possesses a remarkable antiseptic action which renders it particularly valuable for bleaching absorbent cotton."

In view of the fact that there exists this difference of opinion concerning the effect of bleaching itself, and of various bleaching agents on the tensile strength of cotton yarn, and because there seemingly was no data concerning

the effect of strength of bleach on woven fabrics, an investigation was made to determine the effect of various strengths of calcium hypochlorite, sodium hypochlorite, and sodium perborate on tensile strength of cotton fabrics.

EXPERIMENTAL

Two samples of unbleached muslin were used. Sample A was thirty-six inches wide with sixty-four ends per inch, sixty-six picks per inch, thirty-one and five-tenths pounds warp tensile strength, twenty-eight pounds weft tensile strength. Sample B was thirty-six inches wide, with fifty ends per inch, fifty-four picks per inch, twenty-four pounds warp tensile strength, twenty-one pounds weft tensile strength. Such grey or unbleached muslin is inspected, brushed and run on a calender rolling machine which gives the slightly ironed effect without the finishing effect. It is not starched.

Samples were cut and breaking strengths taken according to the specifications for the strip method given in Bulletin 41 of the Bureau of Standards, which directs that strips be cut one and one-fourth inches wide and raveled to one inch. Breaking strength was taken with the jaws of the tensile strength machine set three inches apart. The machine used recorded breaking strengths at half pound intervals; therefore, the readings are accurate only within the half pound.

In each run twenty-four samples were exposed to the bleach, rinsed four times with distilled water, and then conditioned at 100° for two hours and the tensile strength taken. The other twelve were exposed to sunlight for three months and then were conditioned and the tensile strength taken. When strips tore at the jaws of the machine, readings were disregarded, the tensile strength recorded in the tables being the average of those breaking normally.

The bleaching agents employed were calcium hypochlorite, sodium hypochlorite, and sodium perborate. Commercial calcium hypochlorite was used. Sodium hypochlorite was prepared by treating bleaching powder with an equivalent of sodium hydroxide and decanting the clear liquid.

Sodium perborate was made from directions given in a number of literature references and patent specifications. By the combination of one hundred parts of H_3BO_3 , one hundred twenty to one hundred forty parts of cracked ice, and forty parts of Na_2O_2 , a compound probably $Na_2B_4O_5 \cdot 9H_2O$ was prepared. An attempt to convert this substance into perborate, $NaBO_3 \cdot 4H_2O$, by the replacement of half of the sodium by a mineral acid proved relatively unsuccessful, the yield being low and the bleaching action poor.

By the addition of Na_2O_3 and H_3BO_3 to a dilute H_2SO_4 solution containing enough acid to replace half of the sodium, a compound, possibly $NaBO_3 \cdot 4H_2O$, was obtained which was not particularly effective as a bleaching agent. Thinking this might be due to the difficulty in controlling the evolution of oxygen an attempt was made to prepare a compound with the alkaline earth salts, since these compounds are supposed to yield oxygen more slowly.

According to the Liebrecht U. S. patent 1,200,739 sixty-four parts of Na_2O_2 , nine hundred parts of water, eighty of borax and eighty-four of $MgCl_2$ were combined at a low temperature; CO_2 was then run in till the liquid decolorized fifteen per cent of its volume of acidified normal $KMnO_4$. A white crystalline solid, to which the formula $Na_2O \cdot MgO \cdot B_2O_3 \cdot CO_2 \cdot O_2 \cdot 9H_2O$ was assigned, was obtained. This substance evolved oxygen rather slowly and regularly on boiling, and bleached remarkably well. This product was used in the experimental runs.

The strength of the bleaching powder solution was determined by titration with arsenious acid according to the method of Gay Lussac.

Arsenious acid 0.11389 normal was used. Such a solution contains 22.55 grams of As_2O_3 per liter and is equivalent to a bleach of 5.1 chlorometric degrees.

Since the arsenious acid if added to the bleaching solution might free chlorine more rapidly than it could be oxidized by it, thus allowing some of the chlorine to escape unmeasured, a definite volume of arsenious acid (ten cubic centimeters) was used and the calcium or sodium hypochlorite solution was added until the indicator, indigo carmine, was decolorized. An oxidizing agent on this indicator causes it to change from blue through green to yellow. When completely oxidized it is almost colorless. This color change is a sharp one and is satisfactory for titration purposes.

Samples were exposed to the bleach for three hours at room temperature. Titrations were made at the beginning and end of this period and the strength of the bleach, in terms of chlorometric degrees, calculated from the titrations.

In the titration of the perborate solution a definite volume of the oxidizing solution was run into an excess of potassium iodide. The iodine thus freed was titrated with sodium thiosulphate.

Thiosulphate 0.1006 normality was used. Such a solution contains 67.11 grams per liter and would be equivalent to a bleach containing 2.83 liters of gaseous oxygen per liter of solution. It therefore possesses an oximetric strength of 2.83 degrees, since a solution containing the equivalent of one liter of gaseous oxygen per liter of solution has the strength of one oximetric degree.

Samples were boiled in the perborate bleach for thirty minutes and titrations were run at the beginning and end of this period.

The samples bleached with calcium and sodium hypochlorite were noticeably bleached in solutions of initial chlorometric strength of 0.2 degrees; and at initial strengths of 1.5 degrees and above they were entirely bleached.

The samples bleached with sodium hypochlorite were softer than those on which bleaching powder was used. This was probably due to the fact that the sodium compounds were soluble and would, therefore, be more thoroughly removed by rinsing.

The perborate is a very satisfactory bleach. All samples showed some bleaching and above 0.2 oximetric degrees initial strength the bleaching was complete. The fabric was a clear white and free from any harshness.

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(Continued in the next issue)

THE VALUE OF WHALE MEAT AS HUMAN FOOD

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For many years the flesh of whales has been used as food in Japan and the South Sea Islands, and in many parts of Japan it furnishes the only meat available to the poorer classes. In Iceland, the Faroes, and parts of Norway and Sweden, it is reported that whale meat has been used extensively for at least a generation.

Although whaling was at one time an important industry off the coasts of America, and has survived in some degree up to the present time, the use of whale meat as human food was only recently suggested, and this under the stimulus of the war emergency. The whale is pursued chiefly for the baleen or whale bone and for the oil extracted from the blubber stripped from the carcass or rendered by steam from the flesh. The residual flesh when not entirely wasted is usually ground into whale meal and used for fertilizer, less often for cattle and poultry food.

A fairly large number of whales exist, all of them cosmopolitan in habitat. They are usually divided into two groups, the whalebone and toothed whales. Of the whalebone or baleen whales, the chief varieties are the humpback, sei, blue or sulphur bottom, finback, bowhead, right, and California gray; of the toothed whales, the most important are the sperm, killer, or grampus, the dolphins and porpoises. For the most part only the flesh of the whalebone whales is considered suitable for human food. The flesh of the sperm whales is impregnated by the strong flavor and odor characteristic of the sperm oil, and is rarely eaten even by whalers.

The whales most sought after on the Pacific coast are the right and bowhead. Large quantities of the flesh of these two whales are sometimes brought into Pacific coast ports, chiefly Seattle and San Francisco, as frozen meat. However, the flesh of the humpback, sei, of thirty to fifty tons weight, with that of the finback is that most often offered in the markets for human consumption. The sulphur bottom and bowhead, which are the largest animals in existence, averaging sixty-five to eighty-five feet in length and seventy tons in total weight, furnish thirty to forty tons of a coarser meat. Although this meat has not been used in America it has been canned at Pacific coast whaling stations and shipped to other parts of the world.

Of the seven whaling stations operating on the Pacific coast only three have attempted to save the whale meat for human food. So far one cold storage plant at Bay City, Washington, two canning plants in Canada, and one cannery on the California coast have been in operation. If all of the Pacific whaling stations were fitted to produce whale meat, a total of twenty million

pounds of meat could be made available. In the winter of 1917 and 1918 a considerable quantity of the meat was used in the large cities of the Pacific coast.

Ray C. Andrews,¹ of the New York Museum of Natural History, who is well acquainted with the whale population of the world, has recently stated that one fifty-foot whale can be made to yield fifteen tons of excellent lean meat, a quantity equal to fifty-one dressed beeves of eight hundred pounds each. There are in addition fourteen tons of blubber, a ton and a half of tongue, nearly a ton of heart, and two tons of tail and fins. The viscera, bones, etc. make up a total of fifty-one tons for the fifty-foot animal. The meat has been marketed in the frozen condition at 12½ to 15 cents a pound and the canned meat at 18 cents a pound.

When the flesh is frozen within a short time after the animal is killed, and before perceptible decomposition has begun, it is found to have an acceptable texture and flavor exactly like that of prime beef. Within a brief period, however, a characteristic fishy taste and odor develops, which is usually disagreeable to the consumer. This change appears to be due to bacterial action upon the oily part of the meat, and can be lessened or destroyed only by parboiling for one minute in weak sodium bicarbonate solution (about 0.5 per cent). With proper handling, whale meat can be served in such a way as to be indistinguishable from beef.

THE COMPOSITION OF WHALE FLESH

An analysis of fresh whale meat was reported by H. A. Mattill² as yielding the following results:

Analysis of fresh whale meat

	<i>per cent</i>
Water.....	71.22
Ash.....	1.20
Protein.....	23.13
Fat.....	4.24
Undetermined.....	0.21
	<hr/> 100.00

He performed artificial digestion experiments with the whale meat and with lean beef, and found that there was little difference in the results obtained.

In the fall of 1917, a number of proximate analyses upon frozen whale meat were made in the laboratory of Household Science of the University of California with the average results shown on the next page.

¹ R. C. Andrews: *Nat. Geogr. Mag.*, 1911, 22: 411-442.

² Report of Coll. of Agr. and Agr. Exp. Sta. of the Univ. of Calif., p. 58 (1918-19).

The percentages of fat and water vary considerably from those found by Mattill, for, as might be expected, the fat content of whale muscle is variable even though the texture and appearance are fairly constant.

Analysis of freshly thawed whale flesh

	<i>per cent</i>
Water.....	56.9
Ash.....	0.38
Protein.....	25.3
Fat.....	17.4
Undetermined.....	0.02
	<hr/> 100.00

Samples of the freshly thawed whale flesh were extracted with cold water according to the method described by Emmett,³ and total nitrogen, insoluble nitrogen, coagulable nitrogen, and meat bases were determined by the tannin-salt method. The results compared with similarly obtained results for lean beef are shown below:

	NITROGEN			
	Total	Insoluble in cold water	Coagulable nitrogen	Meat bases
Whale meat.....	3.43	2.50	0.35	0.58
Fresh beef.....	3.35	2.35	0.42	0.58

DIGESTIBILITY OF WHALE FLESH⁴

Several experiments were made to determine the digestibility of the freshly thawed meat. Two normal young women were used as subjects, and the procedure followed was similar to that usually adopted in digestibility experiments.

A basal diet of tapioca or rice, cream or butter, sugar, fruit, and coffee, was used, and to this was added a generous amount of the broiled whale meat. The basal diet was taken alone for a fore period of two to six days in each case, and was then supplemented by the whale meat for periods of three days. The urine as well as feces was collected, and food, urine, and feces weighed and analyzed for total nitrogen content.

As a check on the normal protein digestive powers of the same subjects, two experiments were carried out with similar basal diets but with lean beef round added instead of the whale meat.

In the case of the whale meat, the percentages of absorption of nitrogen were found to be 96.8 and 71.9. In the case of the beef the percentages were 99 and 98.7 for the same subjects. With subject A the digestibility of the

³ A. D. Emmett: *J. Asso. Off. Agr. Chem.*, 1915, 1: 267-279.

⁴ Tables showing comparative digestibility of nitrogen in whale meat and beef are on file in the JOURNAL Office and will be loaned on receipt of 10 cents in stamps.

whale protein was very little less than that of the beef protein. With subject B the result was unfortunately obscured by diarrheal complication which greatly increased the fecal output on the fourth and fifth days of the experiment.

The intention was to repeat the whale eating period immediately after the second beef period, but it has been found impossible to procure the frozen whale flesh. The results obtained in the first trial indicate the probability of easy and complete digestion of whale flesh.

Availability of whale nitrogen for tissue repair. Nitrogen balances were calculated for each day of the whale meat experiment. It seems that with both subjects nitrogen equilibrium was attained upon amounts of the whale nitrogen as low as 0.047 and 0.097 grams per kilogram of body weight. These figures compare well with those obtained in similar experiments upon beef and other well known protein foods.

SUMMARY

Data are presented upon the proximate analysis of whale flesh, and of water extracts of the same.

Some evidence has been obtained that the digestibility of whale protein is similar to that in beef.

It is indicated that the nitrogen of whale protein is in a high degree available for tissue repair in the human adult organism.

WEIGHTS OF ONE CUPFUL OF FOOD MATERIALS

SYBIL WOODRUFF

University of Kansas

The adoption by home economics teachers of a uniform system of weights for the cupful of common food materials is most desirable. In experimental work only weights can be relied upon for accuracy; nobody questions this but the difficulty lies in the fact that each school has a different set of weight equivalents for the common measures. The results of experimental cooking reported in various journals have sometimes been difficult of interpretation because two investigators who have thought they were discussing similar food mixtures have really been using noticeably differing proportions by weight.

The time may come when we teach proportions by weight only, rather than by measure, but, until then, the weights reported here are given as an effort to standardize the cup equivalents. The writer does not presume

to say that these findings and these only are accurate when such materials as flours are under consideration; manipulation determines what amount of material the cup will hold. But the average of many weighings in measures of standard capacity, it seems, should give as usable a figure as it is possible to obtain. After all, the need is for uniformity even more than for an exaggerated degree of accuracy.

Equivalent Measures. The volume of the standard cup, one-fourth of the legal liquid quart, is given by the Bureau of Standards as 237 cubic centimeters.¹ One cup is equivalent to 16 tablespoons, and one tablespoon equivalent to 3 teaspoons. No distinction should be made for liquid and dry ingredients, since capacity cannot vary if level measurements are insured.

DISCUSSION OF METHODS

Food Administration Reports. For purposes of comparison the average of the weights reported to the Food Administration in 1918 as those in use by the various university and college departments of home economics are given here.

Class Results. Also there are included results obtained by student work in this laboratory. These are averages of three to five weighings by each of twelve to fifteen students for each material. In this work aluminum measuring cups which only approximated the standard volume were used.

Standard Measures. These determinations have been made by one person and are an average of three to five weighings. The measuring vessel used is a standard liquid quart loaned for this work by the Department of Weights and Measures of the State of Kansas. The quart is used in preference to the cup from the same set of standard measures because the larger amount insures smaller manipulative error. The conical shape of the vessel makes leveling of the contents a very simple matter.

Calculations from Specific Gravity. If the density of a material is known an unquestioned figure can be arrived at by calculation. Wherever this information is to be had, no time need be wasted in weighing. The specific gravity given for fats is the average value reported in Leach's Food Inspection and Analysis, except in the case of butter. The specific gravity of butter fat plus the increase estimated to be due to water gives the density recorded in the table. The specific gravities for milk and skimmed milk agree in all texts; that for buttermilk and for cream of varying percentages of fat can be found in "Milk" by Heineman (1919). The specific gravities given here for molasses and corn syrup were determined with a hydrometer and also with a weighing bottle. The results agree both when the molasses is diluted with four parts of water and when it is undiluted.

Adopted Average. Wherever a reliable figure is obtained as is the case when specific gravity is known, this is adopted. If dropping a decimal or changing the number very slightly gives a round number easier to use in calculations, such a change is made. The fats seem to fall into four groups; the lightest ones are such fats as have had some air incorporated to make them white. Lard seems to be in a group by itself. Butter-like fats form the third group and it seemed impracticable to assign separate weights to the butter and oleomargarines. The oils are so similar that one weight only need be used for all.

With such variable foods as the flours a "sensible" number is sometimes chosen, e.g. exactly one fourth pound for the cup of bread flour and an even 100 grams for pastry flour. The reader will note several small changes of this character.

¹ See Bureau of Standards Circular No. 55 and Miscellaneous Publication No. 39.

The Weight of One Cup of Food Materials

FOOD KIND AND NAME	SPECIFIC GRAVITY	AVERAGE OF DETERMINATIONS				ADOPTED WEIGHT
		Food adminis- tration	Class results	Standard measure	Calculated (sp. gr., etc.)	
		<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>	<i>gms.</i>
Fats:						
Crisco.....		209	211.7	202.6		200
Snowdrift.....				190.0		200
Lard compound.....		207		203.1		200
Lard.....	0.936	219	213.0		221.8	220
Butter.....	0.943	223	218.8	214.4	223.4	225
Oleomargarine:						
Beef fat.....		213		216.5		225
Cocoanut.....				220.8		225
Oils:						
Cottonseed.....	0.923	216	211.5		218.7	218
Corn.....	0.923	219	211.9		218.7	218
Peanut.....	0.919	221			217.8	218
Olive.....	0.917	210			217.3	218
Sugar, etc.:						
Sugar, granulated.....		212	193.6	185.8	}	200
Sugar, granulated.....				199.0		
Sugar, brown, light*.....				134.7		135
Sugar, brown, dark*.....		155	119.6	140.1		140
Sugar, powdered†.....		146	104.6	104.5		104
Molasses, cane.....	1.390	335	323.8		329.4	328
Syrup, corn.....	1.385	332	323.5		328.2	328
Egg:						
Whole egg (5 Medium).....				243.1		243
Egg yolk (14 Medium).....				242.5		243
Egg white (8 Medium).....				244.5		243
Flours and meals:						
Cornstarch.....		135	131.4	124.2		125
Cornmeal, white*.....		139	133.8	133.8		134
Cornmeal, yellow*.....		139		139.4		134
Rye flour†.....		97	73.8	97.9		98
Wheat flour, bread†.....		115	113.3	120.9	}	113
Wheat flour, bread†.....				116.9		
Wheat flour, pastry†.....		104	97.9	103.4		100
Wheat flour, graham*.....		124	129.4	116.5		120
Starchy foods:						
Beans, lima large.....		188	168.9	170.8	180‡	180
Beans, lima small.....				182.8	180‡	
Beans, navy.....		203	170.0	190.9	180‡	180
Oats, rolled,*.....		81	65.8	71.0		75
Rice, white, whole.....		218	212.3	207.9		210
Tapioca, pearl.....		175	165.5	164.6		164
Tapioca, small.....		176	171.1	161.8		164

* Loosely packed.

† Sifted.

‡ Calculated from legal weight of bushel.

Milk and cream:					
Milk, whole.....	1.030	244		244	244
Milk, skimmed.....	1.036	248		245	245
Buttermilk.....	1.033			245	245
Cream, 40 per cent fat.....	0.995	230		235	235
Cream 18 per cent fat.....	1.015	238		240	240

Weights of One Teaspoon of Material. The data for a teaspoon have been obtained by weighing one cupful of the material in a standard capacity, measuring cup borrowed from the Department of Weights and Measures. Tablespoons and teaspoons whether ordinary or especially designed for measuring purposes are as unreliable in volume as measuring cups. The theoretical weight thus obtained would seem to be more dependable than measurements by teaspoons. The reported weights of one cup are the average of three weighings, but of one sample only of each kind of material.

Weight of One Teaspoon of Material

MATERIAL	1 CUP	1 TEASPOON (1/48 CUP)
	grams	grams
Baking powder, alum (KC).....	137.0	2.85
Baking powder, cream of tartar (Royal).....	147.4	3.07
Baking powder, phosphate (Ryzon).....	147.8	3.07
Baking powder, phosphate (Rumford).....	169.3	3.52
Baking soda.....	179.7	3.74
Cream of tartar.....	149.7	3.12
Table salt, medium fine.....	195.1	4.06

Acknowledgment. Elizabeth C. Sprague while with the Food Administration in 1918 was personally responsible for the collecting of the data from universities and colleges which is included in these tables. Her interest in this subject which antedated the Food Administration summary by many years has been most keen during the preparation of this article. Full recognition is accorded to her much appreciated cooperation.

SUGGESTIONS FOR A HOME ECONOMICS RESEARCH PROBLEM. IN HOUSEHOLD PHYSICS

RESEARCH COMMITTEE, AMERICAN HOME ECONOMICS ASSOCIATION

NOTE: "We have a student who would like to do research work on a problem in household equipment. Will you suggest a good practical problem at which she might hope to accomplish something definite this semester, also suitable methods of attack?"

Requests very similar to the above are not infrequent, and it is the hope of the research Committee to present suggestions which may be useful to such inquirers. The following suggestions came from one who has already made a beginning toward the solution of this problem, but who is not able to continue that investigation, and would like to see it worked out in some other laboratory.

EFFECT OF UTENSILS OF DIFFERENT MATERIALS UPON RATE OF COOKING

One might expect, from consideration of the usual figures for rate of conduction of heat through different metals, that aluminum vessels of the same thickness as iron vessels would heat their contents twice as fast and that the rate of heating in ordinary aluminum vessels, as compared with ordinary iron or enamelled iron vessels, would be proportionately still more rapid, on account of the difference in thickness of all. However, a few trials made with vessels of different materials and of the same size and shape, filled with the same amount of water taken at a given initial temperature and stirred constantly during the heating process, placed in a carefully defined position over a certain burner and heated always at the same rate as measured by B.T.U., or calories per minute, to a given temperature, in a room kept at or near a given temperature uniformly maintained without drafts, will probably convince the observer that no such difference in heating rates exists.

The rates at which heat is radiated from the outer walls to the surrounding atmosphere, in case of vessels of differing materials, must be taken into account. The problem of comparing cast iron, heavy enamel ware, and cast aluminum vessels such as are often used in making tea kettles or frying pans, must be differentiated from that of comparing the thinner walled ordinary saucepans of these different materials.

Studies of the effect of material of which the utensil is made, may be attempted both with completely filled and with partially filled vessels, likewise with covered and with uncovered vessels. Maximum differences may be expected to occur among uncovered, partially filled vessels.

Comparative effects may vary somewhat with the rate of heating, as judged by B.T.U. or calorie value of gas burned per minute; also with the method of its application, i.e., whether the edges of the flame ascend about the walls of the vessel, or whether the bottom of the vessel exceeds the diameter of the burner over which it is placed, by several inches. It is better to select 85° or 90°C. than 100°C. as the end-point, because of the difficulty of securing good checks in duplicate experiments when evaporation is excessive.

The efficiency of each vessel under any given set of conditions can be ascertained, by dividing the theoretical number of B.T.U., or calories, required for the given temperature elevation of the given amount of water, by the total number actually consumed during the process of that temperature elevation in the experiment performed. In case of a municipal gas supply, the B.T.U. value of the gas used upon any given date can usually be obtained from the city gas inspector or analyst. Corrections for temperature and barometer should be made.¹

For bibliography see Chemical Abstract, Experiment Station Record, Industrial Arts Index, Engineering Index, Chemisches Zentralblatt, Science Abstracts of the International Catalogue of Scientific Literature.

¹ See Journal of Home Economics, April, 1919, pp. 158-162

FOR THE HOMEMAKER

MARKET PREFERENCES

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Market preferences are elusive to the person who would explain them but only too real to the producer or shipper who disregards them. They are usually built on custom and prejudice only. That no more substantial reason is back of them is evidenced by the fact that the variety, or size, or color of product that is taboo in one city is often, if not always, preferred in some other. Red onions, for instance, are the favorites in New Orleans but are almost invariably discounted elsewhere. Knowing that these preferences are largely without adequate foundation in reason, many producers are inclined to ignore them or to treat them with disdain. A good onion is a good onion, the country over, they argue. But it makes little difference if an onion be good if one out of every three purchasers passes it by. Shippers are coming to understand that they cannot afford to overlook seeming vagaries on the part of the public, for the public is the market. Hence, these preferences are in a fair way to become even more fixed.

The individual purchaser prefers a certain variety, size, or color and sees no reason why she should not gratify her preference. She even knows it is the prevailing preference among her friends; still more reason for demanding it. But the individual purchaser rarely realizes that her insistence on this choice, together with similar insistence on the part of others, no one of whom intends to be unreasonable, constitutes another complication in the already complex matter of marketing.

Cranberries afford a noteworthy example. The large markets of the country vary widely as to the type of berry in demand. New York City prefers dark-colored cranberries but middlewestern markets consider such berries overripe and insist on the lighter colored fruit. This means that the cranberries grown in New Jersey, which are light in color, cannot be marketed to advantage in the neighboring large market of New York, but must be shipped to Pittsburgh, St. Louis, and cities farther west where they are especially favored.

In New York the demand is largely for colored cheese and in Chicago this preference is marked, but "nothing but white cheese goes in this market," says the gentleman from Philadelphia. New York and Philadelphia want butter of light color and a mild flavor; fortunately Boston is gradually shifting toward the same qualifications although formerly

it demanded butter of high color and high flavor. New Orleans is another city that is manifesting a gradual change in butter preference and it, too, is tending away from the high color, although the general demand throughout the South is for butter of high color and relatively heavy salting.

Preferences in regard to eggs, while probably meaningless, are pronounced. New York prefers not only white-shelled eggs, but chalk-white, and they usually sell at a premium over all others. Boston, on the other hand, demands brown-shelled eggs and pays a premium for fancy selected browns. Other markets, other mandates. Philadelphia is so insistent on having dry-picked dressed poultry that scalded fowls are not only slow to move but usually sell below the relative prevailing prices in other cities.

Onion preferences relate to size as well as to color. Crystal wax boilers of small size usually sell at a discount ranging from fifty cents to a dollar below the price paid for onions of the first grade in all of the principal markets except New York. The large foreign population of that city wants small boilers and will pay a premium for them.

Certain large markets, Kansas City for example, are known in the trade as "red apple cities" and yellow varieties such as Winter Bananas and Newtowns find a relatively small market in the Gulf States. In eastern cities, as a rule, some of the yellow varieties are prime favorites. While color preferences in regard to apples are rather marked in domestic markets, large exporters have found that color plays practically no part in export trade.

Some preferences relate solely to wholesale demand and are not traceable directly to the individual consumer. In this class comes the Chicago potato market which is unique in its preference for bulk shipments. Under ordinary market conditions in this city, bulk cars bring a substantial premium over sacked stock, although other large markets demand that potatoes reach them in the usual containers. The explanation is that the Chicago buyer pays for the actual weight as recorded when he hauls the stock over the scales. This he does not do until he has sorted out the potatoes he wants from the car, leaving behind him, often, a goodly percentage of less desirable stock which must be taken out of the car and disposed of as culls; whereas, re-sorting is rarely allowed in the case of sacked potatoes. Both dealers and household customers contribute to the fact that certain cities have decided preferences for certain kinds of melons sold in certain ways. In some markets pink-fleshed melons are in greater demand while in other cities the opposite

is true. Paper-wrapped cantaloupes are preferred by the trade of some cities on account of their attractive appearance while in others the dealers object to the paper wrapped, realizing that it promotes decay by retarding evaporation after the melons are taken from the refrigerator car.

When a grower produces for a local market only, or for neighboring markets, it may be to his advantage to have before him a definite demand for a well-defined kind of commodity or group of commodities, but a steadily decreasing proportion of the food products of the country are grown in the region of their consumption. The large commercial supplies of produce for a large city come from widely separated areas. The large producing areas, in order to supply the large markets with anything resembling well-balanced quantities must be able to ship to any of several markets at will, or to divert carloads already in transit. Only by such methods can gluts be avoided in some cities and under supplies in others. But the shipper who diverts carloads of choice stock packed for a city with a marked preference, now suddenly oversupplied, toward a city with a marked conflicting preference, even though not fully supplied, is courting disaster. Shippers have found repeatedly that the loss incurred in trying to place goods regardless of consumers' preferences is much greater than that incurred by long distance shipment and cross hauls, even at present rates of transportation, when employed to reach a market demanding the particular variety, size, or color of product they have for sale. Experiences of this sort demonstrate clearly the truth of the disputed maxim that, after all, the consumer is king.

HOUSEHOLD BRUSHES

RUTH VAN DEMAN

Household brushes are apparently articles of equipment that have been "taken as found and no questions asked." There seems to be little or no printed material about the types of household brushes and the materials of which they are made, written from the point of view of the woman who buys and uses them. Nevertheless, brushes are put to fifteen or twenty good uses in cleaning and keeping in running order the house and its furnishings. One can hardly turn a page of any recent publication on housecleaning without finding the directions to clean this or that surface or material with soft or stiff, pointed or spiral brush as the case may be. Definite information about brushes would help the buyer to choose them more intelligently, using some other standard besides price as a basis of judgment.

THE COMMON FIBERS IN HOUSEHOLD BRUSHES

From sources as diverse as the Arabian pony, the Chinese wild boar, the mule, the Australian goat, tropical palms, Mexican weeds, and cousins of the century plant, according to the manufacturers, come the fibers that are made into brushes to scrub our sinks, sweep our smoothly finished floors, and clean our bottles.

The animal fibers, which are more expensive, go into the brushes in which durability, texture, pliability, and "spring" count. For instance the floor brush of good quality mule hair will not only give long and excellent service, but will also "wear right down to the block," as one brush manufacturer puts it. In other words, use will gradually wear down the ends of these fibers, but they will remain pliable, springy, smooth, and they can be successfully cleaned by careful washing in lukewarm soapsuds or in warm water and a little ammonia. If the housekeeper can afford the original outlay and will give them even reasonable care, brushes of animal fibers of good quality will be found more economical in the end for many purposes. The animal fibers are generally used in brushes for floors having varnished, waxed, or other smooth surface, for upholstery and heavy hangings, and for walls with fairly rough surface. For scrubbing and rough uses the vegetable fibers are best, both because they are more rigid and because they are less affected than animal fibers by alkalis and boiling water. Spiral bristle brushes of various sizes are excellent for cleaning bottles, radiators, the crevices in

wicker furniture and bed springs, and numerous other spots that are difficult to reach with a cloth and fingers.

Fibers from more than a dozen kinds of palms are used in brushes, and are given a variety of trade names, such as "Ox Fiber," "Kittool," "Palmyra," and "Arenga." Some of these, for instance "Kittool" and "Arenga," are of almost hair-like fineness, while others are so coarse and stiff as to be fit only for use in street and stable brooms. Toughness and durability are characteristics of the best palm fibers, but they are somewhat harsh and are best for scrubbing and for sweeping cement and other hard, rough surfaces. In color some of the most widely used of the palm fibers are tan and reddish brown.

Rice root, which has no connection with the cereal but is the underground portion of a large bunch grass growing on the mountain slopes of Mexico, is a stiff, cream-colored, wavy, rather brittle fiber, once widely used for scrubbing brushes but now going out in favor of the palm fibers. Disturbed labor conditions in Mexico are said to be an important reason for this, but when told that, in spite of the "battle, murder, and sudden death" in Russia and Siberia, the exports of wild boar bristles have not been seriously affected, one questions whether the falling off in the use of rice root is not due to the superior quality of other fibers produced as cheaply. Rice root, or "Raiz de Zacation" as it is called in Mexico, has been a popular fiber with European brush manufacturers, who mix it with Venetian whisk, an Italian grass root. Because they know this fiber, Italians, French, and other Europeans in this country still demand rice root brushes.

Tampico, or istle (*et-le*), is the trade name covering three different fibers, two of which are extensively used in a great variety of household brushes. These fibers, Tula and Jaumeve (*how-u-mah-re*), are prepared by hand in Mexico from agaves, relatives of the century plant which is conspicuous in the arid regions of the Southwest. They are tough, fine, yellowish to creamy white in color, and especially resistant to injury by water. Tampico is often colored black and reddish brown, and a mixture of these two with the natural color is said to please particularly the fancy of negro brush buyers. When colored and skillfully sized, tampico looks not unlike animal bristles, and is in many cases used for the larger part of a brush with a few rows of animal bristles or hair around the edge. Such mixtures give good service, and, like combinations of linen and cotton in textiles, are cause for complaint only when sold for what they are not. If the housekeeper is careful, however, she need not be deceived. The vegetable fibers are usually less lustrous

and smooth than those of animal origin, and burn like a splinter of wood, leaving an ash, while a burning animal bristle shrivels at the end and gives off the characteristic odor of burning hair.

TYPES OF BRUSH CONSTRUCTION

From the point of view of construction there seem to be two general types of household brushes on the market: those with the fibers fastened into a wooden block in one of several ways, and the twisted-in-wire, which may be either straight or oval. Each has its own range of usefulness.

In the old-fashioned wooden block brushes, the fibers may be stapled in, the cheapest form of construction; or cement set; or wire drawn, the most tedious and consequently the most expensive way of fastening them. By far the greatest number of household brushes are stapled, and this type of construction has another advantage besides cheapness. Each knot or tuft of fibers is fastened in separately, and one may loosen and drop out without affecting the others; whereas, in the wire-drawn brush if one knot comes out, the whole wire is likely to become slack, thus allowing many knots to drop out. The cement set can be easily told by the little rim of dried cement or pitch, as manufacturers often call it, on the block around each cluster of fibers. If the fibers are wire drawn, the block has to be split and screwed together again and the crack can always be detected. The cement-set brush will give good service if certain precautions are taken. It has this disadvantage, however, that, if kept in a warm closet as in many households, the heat dries out the cement and makes it so brittle that it fails to hold the tufts of fibers in place. At any rate, in buying a brush for long use, the housekeeper will find that it pays to notice how the fibers are held in place.

The twisted-in-wire brushes are spiral, with fibers held by strands of rust-proof wire that twist tightly about each other and at the same time clamp the fibers in place. Wood, celluloid, or sometimes the twisted wire itself forms the handle. Some of these brushes are rigid, others flexible, so that they can be poked into curving drain pipes and between the coils of a radiator.

Manufacturing and selling brushes may seem to many a rather dull business, but there are apparently some amusing "come backs" from the trade. Boston, with its proverbial intelligence, refuses to buy scrubbing brushes without handles to keep the worker's hands safely above the grimy water. In Cincinnati it is the approved thing to clean shutters

with the brushes originally designed for scrubbing wholesale milk cans. Other sections of the country, without obvious reason, demand that their brushes be pointed or rectangular, and have fibers of various colors. A study of brush habits might bring out some interesting data, and certainly durability tests of the various fibers and their adaptability to given purposes would be valuable.

MEAT PRICES AND THE HOUSEWIFE

DAY MONROE

Department of Foods and Cookery, Teachers College

A woman is usually considered an intelligent buyer of meat if she can recognize some of the commonly used cuts and knows how to cook them. But it is significant of the present movement toward a better understanding between the retailer and the consumer that the butcher is now asking the housewife to carry her knowledge further and to understand his problem in meat selling. It is not enough that a customer know what cuts she likes; she should also know what cuts there are, and should realize the quantity of beef her butcher must buy in a side of a steer in order to give her a few porterhouse steaks.

At a Food Forum on meat,¹ the need of coöperation between the housewives and the butcher was set forth by George Kramer of Ye Olde New York Branch United Master Butchers of America. A good side of beef from a western steer was brought to the demonstration, weighed, and cut up as for retail sales. Each cut was weighed, the weight posted, and with it the percentage weight of the whole given by that particular cut. Mr. Kramer told of inquiring of a group of women what kinds of beef they used in their homes. All of them were familiar with porterhouse and sirloin steaks, round for steaks and roasts, and prime rib roasts; some bought shin of beef for soup and chuck for stews. But their knowledge of beef went little beyond this. Of the rump, brisket, plate, navel, skirt, flank, and shoulder, slight mention was made.

When a butcher buys a side of beef he pays one price per pound for the whole; but when it is cut up for sale the prices must be set according to the desirability of the meat. No one would think of paying as much for shin bone meat as for a thick juicy porterhouse steak! So although the tender cuts cost the consumer much more per pound than the whole-

¹ Teachers College, under the auspices of Miss Van Arsdale of the Department of Foods and Cookery.

sale price, sometimes pieces not so desirable can be bought for even less per pound than they cost the butcher.

Unfortunately the cuts we like best are but one-third of the side of beef, by weight: porterhouse steaks, 6 per cent; sirloin steaks, 7 per cent; round steaks, 5 per cent; prime rib roast, 6 per cent; blade rib roast, 5 per cent; top sirloin, 4 per cent; total, 33 per cent.

On the other hand the things we seldom ask for, but which must be paid for by the butcher when he buys his choice cuts make up two-thirds of the total: soup meat (shin, flank, neck, plate, etc.), 21 per cent; fat and suet, 10 per cent; bones, 8 per cent; navel, 5 per cent; brisket, 5 per cent; horse shoe cut, 2 per cent; rump, 3 per cent; bottom round eye roast and middle cut, 3 per cent; cross rib roast, 4 per cent; skirt and flank steaks, 1 per cent; chuck steaks, 4 per cent; waste and shrinkage, 1 per cent; total, 67 per cent.

If you were keeping a store and had to sell two-thirds of the goods you bought at little above cost in order to persuade your customers to buy them, you would plan to make enough from selling the other third to pay your rent and running expenses and to support your family. This is what the butcher must do, and herein lies the explanation of the high cost of the "best" meat. These "best" cuts are no higher in nutritive value than many of the less expensive ones but they must be the profit makers.

The only way to reduce the price of steaks and prime rib roasts is to use the other cuts more frequently so that there will be a steady market for the whole side of beef. It is easy to cook sirloin steak, but it is cheaper to buy chuck steak occasionally even if it must be more carefully prepared. If we think we have little time for stews and pot roasts and braised meats, we should buy pressure cookers or fireless cookers, or we should not complain about the high costs of the other cuts.

The steer cannot be changed. Nature made him as he is with much meat for stews and little for the steaks and best roasts. It is the housewife's responsibility to realize this and to try to help the butcher use his beef "left-overs" just as she would plan to use less desirable chicken "left-overs" in her own home. The butcher can not help her by lowering meat prices unless she helps him to find a market for all of the meat which he must buy. There must be coöperation.

EDITORIAL

A Larger Journal. Beginning with July each regular issue of the JOURNAL will be increased to 52 pages, exclusive of advertising, as long as this space can be adequately and profitably filled. This change is based upon the belief that home economics women are interested in their professional publication and will supply it with good, representative material. The JOURNAL also anticipates an increasing number of fresh, new contributions from the affiliated states, in the form of news, projects they may undertake, and other items of interest. The JOURNAL is striving to be the real voice of the Association, the "tie that binds" the states and regions together into a strong American Home Economics Association.

Even this small increase in the number of pages is not without its drawbacks, however. Drawbacks seem to have a way of being connected with finances. So it is in this case. The printing of these pages alone, necessitates securing at least 50 new subscriptions a month. But we have taken the step, and we count on a larger JOURNAL to bring new interest and new subscriptions, and on new interest and new subscriptions to make a larger, better JOURNAL.

Purpose and Advantages of State Affiliation. The purpose of regional organization and affiliation of individual states with the American Home Economics Association is twofold:

1. To provide a more unified Association.
2. To provide a more representative Association. It is believed that these two purposes can be fulfilled through the affiliation of individual states and the grouping of these states into regions having common problems.¹

Some results anticipated from affiliation are as follows:

Through affiliation of a state, each member of the State Association becomes a member of the National Association with full voting privileges. This membership is secured at \$1.00 instead of \$2.00, the cost of membership outside the state association.

The affiliated state is privileged to elect a councilor to represent it on the National Council. The proceedings of the Annual meeting will be printed in the Journal for all members of the Association.

Because of the lowered national dues and the privilege of the proceedings, it will be possible to secure a wider state membership from the

¹ For basis of affiliation, see report of Annual Meeting, A. H. E. A., *J. Home Econ.*, Sept., 1921

teachers in the small community, thus increasing the state revenue and hence the work which the state may promote to the benefit of all.

Because of larger and more representative state associations, there will be an increased revenue to the A. H. E. A. which can be used in making home economics material available. The support of the executive secretary seems possible through this plan.

Because of the unity with the National Association, it will be possible to keep states in touch with problems of national interest, through correspondence, through persons who may be going from state to state, and, monthly, through the JOURNAL.

A larger and better JOURNAL is a probable outcome, because of the better organization through which to secure and maintain JOURNAL subscriptions and content. As a corollary to this, the larger subscription list will mean more advertising and a better financial status.

Finally, the results which may be anticipated in the general support of the professional association for home economics women will make it possible for the Association to continue its present work and to enlarge its scope of influence, a condition impossible save as every person interested lends her influence. This influence is best expressed in active membership in the A. H. E. A.

MILDRED WEIGLEY,
Chairman, Regional Organization.

The Rôle of Instinct in the Choice of Food.—"Can instinct guide the animal advantageously when there is a limited variety of food available?" Concerning this there has been much speculation and a little scientific investigation. Some investigations several years ago gave Evvard² reason to believe that swine were able to select the kind and amount of food they needed. Osborne and Mendel³ found that rats were capable of choosing with surprising effectiveness between two proffered food mixtures similar in texture and attractiveness but differing notably in nutritive value. One mixture was described briefly as nutritively inferior in contrast with the other which was more adequate for nutrition in growth; the animals instinctively ate more freely of the one which experimental evidence had demonstrated to be preferable. More recent experiments by Mitchell and Mendel⁴ have demonstrated

² Evvard, J. M., Proc. Iowa Acad. Sci., 22, 375 (1915)

³ Osborne, T. B. and Mendel, L. B., Choice between adequate and inadequate diets, made by rats. Jour. Biol. Chem. 35, 19 (1918)

⁴ Mitchell, H. S. and Mendel, L. B., Choice between adequate and inadequate diets, as made by rats and mice. Amer. Jour. Physiol. 58, 211 (Dec. 1921)

that rats and mice are capable of choosing from foods of a limited variety so as to meet satisfactorily the demands of growth. Groups of animals were allowed to choose freely and eat unrestrictedly from prepared mixtures described by the authors as (a) high and low protein, (b) complete and incomplete protein, (c) high and low in certain vitamins, salts, et cetera; when allowed such a free choice they thrive as well as those animals fed on a purposely superior diet. In one part of the experiment where meat and corn preparations and a salt mixture were offered ad libitum, the rats chose in all cases not a high protein diet but a moderate one which, judged by the usual standards, was sufficient for all purposes. These results were in accord with a previous statement by Osborne and Mendel: "Desire of the young animal for food is something more than mere satisfaction of calorific needs. The demand made by growth impulse must be met by food of proper chemical constitution."

It would be interesting to know how far the man of modern civilization with his perverted tastes could be trusted to select by instinct a diet fully adequate for his needs. There is abundant evidence that he does not always choose his own food nor that for his young in the wisest manner. Instinct today has relatively little to do with his selection which is limited by a restricted supply and economic repressions. The more civilized man becomes, the less choice is he able to exercise in this regard, and the more fixed do his dietetic habits become. It is impossible to believe that man could have reached his present state of development without a diet adequate for all purposes. Whether the diet of today will prove equal to the demands of the future, many scientists are doubting. It is impossible to revert now to instinct; the alternative is education in right habits.

SYBIL WOODRUFF.

THE OPEN FORUM

To the Editor of the Journal:

The following family history has been sent me in response to a plea for such material which appeared in my book, "Successful Family Life on the Moderate Income." It seems to me to show such an admirable spirit and so much intelligence that I wish to share it with the readers of the Journal.

If we as an Association could have a thousand actual or even carefully estimated budgets of family incomes under \$3000 we would possess material for a very helpful study of the conditions in which a valuable portion of the community live.

MARY HINMAN ABEL.

Family History, 1921

Family made up of man aged twenty-nine years, woman aged thirty, and one child—boy two years.

Place of residence. College town in east.

Occupation of man. Foreman of new and repair work on gas service. Hours: 9 hours daily and writing to do evenings, also on duty for trouble calls at all hours of day and night, Sundays and holidays.

Parentage, Education, and Character

Man. His mother died when he was two years old, his father was shiftless, therefore selfish and brought the boy up to buy before earning the wherewithal to pay. No schooling after nine years of age and after that his father took his wages till he was twenty-one years old, keeping him shabbily dressed. Man saw the folly of such living, was naturally neat, became industrious upon leaving his father and surroundings, wanted to save but found it hard to start. He is quiet, very fond of music—good music, and appreciates refinements of life.

Woman had to leave school in second year of high school because of long and severe illness which left her partly crippled and not strong. Went to work in an office when nineteen years old, never had heard of budgets but kept the following:

Board, Room and Washing.....	\$5.00
Savings.....	2.00
Clothing.....	1.50
Church.....	.50
Vacation, Xmas, etc.....	.50
Doctor.....	.50
	<hr/>
	\$10.00 per week

Child is well, obedient and good, therefore always happy, considers it a privilege to wait on others.

Start in Life. This couple were married when twenty-two and twenty-three years old, respectively. Woman's savings of \$500 used to make cash payment on home very centrally located. Man's savings paid for the furnishings of four rooms including an unusually well stocked pantry.

Financial Report for 1921. Yearly Income \$1456.00 (\$28.00 a week).

Rent—includes: interest, taxes, water rate, insurance on house and furniture, and \$50.00 for year's repairs, etc.....	\$5.00
Insurance—20 pay't life, is more than we could afford but wife needed protection because of delicate health.....	4.00
Savings.....	3.00
Savings toward Home.....	1.00
Operating—heat, light, gas and telephone.....	3.00
Clothing—Man is very hard on clothes.....	3.00
Food.....	5.00
Health—Wife had a hundred dollar operation and is under doctor's care all the time.....	3.00
Church and Charity.....	.50
Vacation, Xmas, etc.....	.50
	<hr/>
	\$28.00

Budget for 1922. Income to be about \$1560.00

Savings:

For the bank.....	\$2.00	\$10.00
5 shares of coöperative bank stock.....	1.25	
Insurance.....	5.75	
Payment on home.....	1.00	
Rent.....	\$5.00	
Clothes.....	\$3.00	
Operating.....	\$3.00	
Food.....	\$6.00	
Health.....	\$1.50	
Church, etc.....	\$.50	
Vacation, etc.....	\$1.00	
	<hr/>	
	\$30.00	

Family Life. Home loving people, get out very little except to church. In summer of 1922 hope to visit town where woman lived as a girl.

Prospects for the Future. Hope to have enough paid in on our home so that paid up shares of coöperative bank stock (\$1000) can make the final payment.

When child is seven or eight years old we wish to purchase five more shares of coöperative bank stock to be used for his college education with the help of his own earnings and savings.

Hope to install plumbing and heating in our home by the next ten years. Hope to have a piano. Want to invest our savings to start an old age fund.

Home Economics in the Citrus Fruit Region.—Under the title "An Appeal to Human Dignity" Dr. F. W. Blackmar, Dean of the Graduate School of the University of Kansas describes in a recent issue of the "Survey" an experiment in home building made by the California Citrus Fruit Growers' Exchange. He says in part:

The local fruit associations, each with a central packing house, remedied the evil of a continual shift of labor by making permanent homes for Mexican families. In the center of the fruit packing area they built villages of ten, thirty-six or sixty one-family houses, as required. These are constructed of either wood or concrete, and consist usually of four rooms and bath, with modern conveniences, but they are simple in arrangement to suit the ideas of the Mexicans who live in them. Around each one is a plot of ground large enough for raising all the vegetables used by the family. Lodging houses for unmarried men have also been erected. These homes are furnished to the laborers at nominal rents just sufficient to cover interest on the investment. Not only the streets and yards, but the interiors of the buildings are under the closest sanitary inspection. This method of housing has a tendency to insure permanent residence and employment, for the homes are so superior to the dirty, squalid shacks occupied under ordinary circumstances by Mexican laborers that the families are willing to stay on, not only through the season, but from year to year.

* * * * *

The Mexican laborer is rather a faithful type, willing to be directed by those who understand his psychology. While one would scarcely look for leaders in American civilization from this population that drifts over the border mainly for the purpose of working for food, a little clothing and many cigarettes, it is a great achievement to have fitted it intelligently into an American system of labor.

If so much can be accomplished with this group of people—of all classes the least interested in community life and affairs of government—does it not emphasize the statement, frequently made, that the great immigration labor problem has arisen because the United States has failed to care properly for the foreigner? Knowing that much labor agitation arises because of the discontentment of foreigners, is it not reasonable to conjecture that, with more interest and care on the part of the employers, irregularity might have been prevented?

THE QUESTION BOX

Question: What is your opinion as to the method of ventilating large kitchens by means of a ventilating fan?

Answer: 1. This method of ventilation is one that is common in restaurants. It is successful.

2. Its cost of operation would be between 1 and 2 cents per hour.

3. The apparatus would probably cost between \$25.00 and \$50.00 exclusive of installation.

4. Its efficiency would be affected by a strong wind opposing.

5. Doors leading to other rooms would probably have to be closed when it was in operation to insure against odors getting into other rooms.

6. In very cold weather it would likely reduce the temperature considerably.

7. To summarize: In all but extreme conditions of wind and temperature it could be depended upon to do what is claimed for it.

BOOKS AND LITERATURE

Getting Your Money's Worth. By ISABEL ELY LORD. New York: Harcourt, Brace and Company, 1922, pp. 210. \$2.00

"*Getting Your Money's Worth*," is a book which the housekeeper wants and needs and it will do much both to take the mystery out of budget making and to clarify people's thoughts in regard to their questions of personal finance.

In the preface Miss Lord states, "Getting your money's worth means knowledge of how to choose and how to buy, as well as how to apportion the income, but here, for the sake of brevity, only the latter aspect is discussed." This statement is perhaps the key to the contents of the book but fortunately one also finds some most valuable help on the how to choose and how to buy aspects because of their relationship to apportionment.

One distinct departure which Miss Lord makes is in the classification of the expenditures. Instead of the usual division of Food, Clothing, Shelter, Operating Expenses, Higher Life, Personal Expenses, and Miscellaneous, she suggests a list of thirty-five items, arranged alphabetically, from which one can choose the item applicable to her particular family. The use of such a list admits of no misunderstanding. The discussion of the various items is full of practical help.

The chapters on "Why and What Accounts" and on "How to Keep Accounts" will do much to produce a right attitude of mind toward accounts. These chapters give enough detail of the mechanics of account keeping, especially of the use of the card system, so that the novice will not give up in despair when confronted by the innumerable questions which arise in keeping classified accounts for the first time.

The common feeling that a budget, once made, is inflexible and should be adhered to strictly is overcome in the chapter, "On Readjusting." The reader loses some of her antagonism to the budget because she realizes that the right kind of budget can be altered when necessary, is constructive, and is an aid to better balanced living. The discussion of income other than money should make the housekeeper put a truer

valuation on her work. The housewife is apt to forget that her routine household duties and her thrift are productive. The discussion of income other than money throws a much needed light on the value of these tasks.

One cannot read "*Getting Your Money's Worth*," without recognizing that a budget may be a personal matter but that its social aspect is of greater importance than its individual aspect. Because of the constructive and practical tone which runs throughout the book, many people will be brought to a realization of the satisfaction which budgeting, account keeping, and right uses of resources may produce. Miss Lord has added to home economics literature a book which will be useful in the class room but which will be especially valuable to both men and women in adjusting their personal financial problems.

SARAH J. MACLEOD.

What is Social Work? An Introductory Description. BY MARY E. RICHMOND. New York: Russell Sage Foundation, 1922, pp. 268. \$1.00.

Workers and students in the field of social work have looked forward with eagerness to Miss Richmond's new book, "*What is Social Case Work?*" because of her unique position in her profession. As Director of the Charity Organization Department of the Russell Sage Foundation and author of "*Social Diagnosis*" and "*The Good Neighbor*," she has been for years a recognized authority on social case work.

The volume recently issued, which calls itself "*An Introductory Description*," begins with the narration of six histories, chosen by the author as typifying case work. These include a difficult, maladjusted girl who is not a defective; a small boy in need of a home; a husband and wife who cannot agree; a fatherless family with children who are not receiving proper care; a widow with children, who is not an efficient home maker; and an older woman with difficulties which her relatives fail to understand. These bring out various problems and emphases in social case work. One case, for example, stresses the value of imagina-

tive sympathy instead of routine court punishment for a young petty offender, showing the constructive work possible with a difficult girl who otherwise might have become a hardened offender. Another brings out the need for continuing a case long after the old-time agency would have closed it. A third shows the value of studying the client's background. It illustrates the long and, at times, discouraging efforts required to develop in a mother honesty, cleanliness, and self-respect, through learning her background and appealing to her pride and love of her children. Again, the problem of the reëducation of a family is taken up, with a discussion of the value of the home in the building up of family morale. There is a discussion of the possibility of securing the coöperation of relatives, not merely from the standpoint of financial aid, but primarily for help in the rehabilitation of the family.

The book shows the author's acquaintance with many cases and makes the reader desirous of more. One wishes that there had been room for the inclusion of cases illustrating such situations as that of an aged couple; a chronic deserter; chronic underemployment or long-continued unemployment; industrial accident; a father with motherless children; and an unmarried mother.

Social case work is defined by Miss Richmond as consisting in those processes which develop personality through adjustments consciously effected, individual by individual, between men and their social environment. This requires in the skilled case worker the combination of four qualities: insight into individuality and personal characteristics; insight into resources, dangers, and influence of social environment; direct action of mind upon mind; and direct action through the social environment. The emphasis is not at all upon relief but upon the development of personality. Relief is considered as but one of the items of secondary consideration in the larger program.

The author devotes one chapter to a discussion of the relation of the social case

worker to the home, as the seat of certain potential sources of strength and probable sources of weakness. She suggests the dangers inherent in the substitution of specialists for the home, because, "speaking broadly, children do not prosper without fathers and mothers who love them and love one another." She emphasizes the need for an intelligent understanding of the laws defining the relationship of husband and wife, in order that good case work may be done in this field.

In other chapters the author outlines the relation of the case worker to the school, the workshop, the hospital, and the court, stating that no one of the organized forms of social life can be studied save against the background of all the others. Group work, social reform, and social research, which interplay with social work, are discussed. The relationship of social work to social research and to social reform is set forth. The service which social work can render in the field of public administration also has place in the book.

The work is rich in illustrative material. It shows catholic reading in many fields, including sociology, philosophy, and psychology. Many good side lights are given on social work, which it is difficult to refrain from quoting. Pertinent suggestions, thrown out almost as an aside in many cases, form some of the most valuable material in the book.

MOLLIE RAY CARROLL,

Social Science Department, Goucher College.

Personal Hygiene. BY MAURICE LE BOSQUET. Chicago: American School of Home Economics, 1921, pp. 224. \$1.00.

The aim of this text-book is the "preservation and improvement of health." Again and again the author stresses the idea that "the time, strength, and money used for the improvement of health are not taken from greater or more necessary things, but that health is a fundamental necessity." Of course we all know this in a general way, but do not many of the appurtenances of our civilization compel unhygienic living unless special attention is focused on "health

first?" This is what Mr. Le Bosquet is attempting—to make us really believe that health comes first.

The text is divided into three parts. Part 1 deals with the Human Machine and contains brief descriptions of the structure of the muscles, the skin, and the sense organs. Part 2, the Running of the Machine, takes up the work of the body as an energy transformer. There are paragraphs giving the essential principles of digestion, nutrition, circulation, temperature regulation, and waste elimination. These make the foundation for Part 3 which discusses the Care of the Machine. Excellent advice is given on such topics as the care of the hair, teeth, skin, complexion, the hygiene of clothing and shoes, and the hygiene of fatigue, rest, and muscular activity.

A whole chapter is devoted to the hygiene of physical exercise. It is estimated that in the last twenty-five years the amount of muscular work done by people in the United States has decreased about seventy-five per cent. Hence there is no principle in hygiene better established than that considerable muscular activity is necessary to counteract the evil effects of sedentary life. This means for most of us, definitely planned exercise. For the best hygienic results, this exercise must involve a maximum amount of muscular work and a minimum of nervous energy, must be taken daily, must be vigorous, rhythmic rather than sustained, enjoyable and taken in the open air. Therefore out-of-door fads are fine hygienic measures. The study of birds, geology, amateur photography, and the like; games—golf, tennis, rowing, bicycling, riding, swimming, walking, are good fun and good hygiene. A set of formal exercises with instructions and illustrations is included. The book closes with a chapter on the ethics of health by Dr. Thomas D. Wood and one on the use and abuse of drugs by Dr. H. M. Lufkin. There are questions at the end of the chapters and a short bibliography.

From the viewpoint of interest the book lacks a sufficient number of good illustrations. There are a few confused state-

ments, doubtless due to brevity of expression. The use of one name for a given substance rather than two or more, for instance, enzyme, nutrient, protein, would improve the text.

CAROLINE E. STACKPOLE,
Teachers College.

A History of Industry. By ELLEN L. OSGOOD. New York: Ginn and Company, 1921, pp. 430. \$1.72.

That economic laws viewed first historically and then in their present-day application will insure the sound judgment in public affairs which is expected of American citizens is the view of Ellen L. Osgood in this secondary school text, *A History of Industry*.

The author evidently relies largely upon definite knowledge and interpretation of the history of early industrial periods to secure an understanding of the workings of economic laws, since more than half of the text deals with the history of industry previous to the industrial revolution and less than one-sixth of it is devoted to the periods immediately following the industrial revolution and the industrial period of the latter part of the nineteenth and early twentieth centuries. This view is further emphasized by the topics for discussion at the close of each chapter. These topics deal mainly with the subject-matter of the chapters and give relatively little attention to the contrasts and comparisons which would tend to develop an understanding of the workings of economic laws under present-day conditions.

The practical difficulties of using a text which tends to emphasize one phase of the subject, while very real to the teacher who is confronted by the time limit of the school program, do not overtop the usefulness of this text. Periods of industrial development are clearly defined. Characteristics are given in a brief and interesting form. Economic laws and their relation to the industrial development of England and continental Europe, as well as colonial and modern America are traced through the periods.

The book has much to recommend it for high school purposes as a text to be followed and as a source book for the instructor who teaches by the problem or project method. It will also meet a need in the vocational schools, technical schools, and the continuation schools though in these fields of education teachers will wish that this much-needed text might have traced more definitely and interpreted more fully the perplexing and far-reaching problems of division of labor and specialization.

CLEO MURLAND,

Cass Technical High School, Detroit.

A Dietary Study of Some Kansas Institutions under the Control of the State Board of Administration, by Dr. E. H. S. Bailey, Professor of Chemistry, University of Kansas, and Chemist, State Board of Health, has been published recently. The contents consist of dietaries of the penitentiary, the industrial reformatories, the hospitals for insane and epileptic, and the schools for the blind, the deaf, and the feeble minded, and a comparison of the dietaries of these nine institutions. The bulletin contains seventy pages.

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NEWS FROM THE FIELD

FIFTEENTH ANNUAL MEETING, CORVALLIS, AUGUST 1-5

The first session of the Convention will be held at 2 o'clock Tuesday, August 1. The address of welcome by the president will be followed by a Council meeting open to all members of the Association. Section meetings will be held each morning as follows:

Wednesday: Clothing and Textiles, House Administration, Home Economics Education, Business and Professional Women.

Thursday: Food and Nutrition, Home Economics Education, Institutional Economics, Extension.

Friday: Institutional Economics, Clothing and Textiles, Science, Homemakers.

Saturday: Food and Nutrition, Extension, House Administration.

The afternoons will be given over to conferences, committee meetings, automobile trips, golf, swimming, horseback riding, tennis, and informal teas. General sessions have been planned for every evening, with speakers of national reputation.

The following organizations will send representatives: Children's Bureau, Women's Bureau, National League of Women Voters, American Red Cross, General Federation of Women's Clubs, Public Health Service, National Research Council, National Consumer's League, Child Health Organization.

The preliminary program for the Convention will appear in the July issue of the JOURNAL.

THE HOME ECONOMICS SPECIAL

A very attractive itinerary has been printed giving in detail the arrangements made by the Transportation Committee with the Burlington (C. B. & Q.) and Great Northern Railways, for the operation of a Home Economics de luxe special train to Portland, Ore., leaving Chicago via the Burlington Railroad at 10:10 a.m. July 26, arriving St. Paul 10:10 p.m. same day.

Leaving St. Paul at 10:45 p.m., our Special train arrives Glacier National Park at 8:00 a.m. July 28th. Two days and one night will be spent within its borders, motoring and launching. The schedule from Glacier Park will be as follows:

Leave Glacier Park, 8:00 p.m., July 29th, arrive Seattle, 8:00 p.m. July 30th; Leave Seattle, 11:59 p.m., July 30th, arrive Portland, 7:20 a.m. July 31st.

The Transportation Committee has arranged the schedule so as to arrive at Portland the morning of July 31. This will enable the members of our party to enjoy a thorough rest, visit the many points of interest, and acquaint themselves with the metropolis of the Puget Sound country—Portland—before the opening of the meeting on Tuesday at Corvallis.

The entire trip is being operated at actual expense, as itemized below:

Summer tourist round trip fare, Chicago to Portland	\$86.00
Lower berth, one way.....	24.75
Approximate expense of meals in dining car enroute to Seattle.....	12.00
Complete two-day tour in Glacier Park.....	26.25
Total.....	\$149.00

For reservation on this special train, or further information, kindly communicate with Nina Streeter, Chairman Travel Committee, 1370 E. 54th Street, Chicago.

The final date for making reservations is June 20th. This cannot be extended. The Transportation Committee must advise the railroad companies as to the number of cars required for our party. Take care of your reservations—now—please.

Reservations for accommodations during the convention should be made with the Director of Dormitories, Oregon Agricultural College, Corvallis, Oregon, at as early a date as possible.

THE FOREIGN FIELD

China. The following are extracts from a letter to the JOURNAL from Emma H. Gunther, written from Canton Christian College. Miss Gunther and Miss Balderston are lecturing and studying the educational work in China:

"True Light Middle School is a well organized high school for girls with adequate buildings, a delightful campus, and an especially strong staff. They have begun their work in household economics with emphasis just now on nutrition and Chinese foods, a course in housewifery, and also one in household budgets. They have good opportunity for the development of this work with a chance for a separate building next year; with a teacher who has had household arts training for four years at Teachers College; and best of all with the interest in home economics already established. It has been a great delight to plan their courses with them and to anticipate the work of the next five or ten years.

"In coöperation with the Y. W. C. A., we have met a group of about twenty college women whose lines of work link up directly or indirectly with the home. We had a group conference and discussed the possibility of a composite course for groups of wealthy Chinese women who have asked for such classes. The plan suggested was that each of these women should contribute a lecture or two and then later aim toward work that is not specialized. For instance, one from Hackett Medical College will give the special baby care and baby food; another who is here at the college and coöperates with the U. S. Department of Agriculture will demonstrate Chinese foods; another who has had excellent experience in building Chinese homes will talk on the finishing of wood work and floors necessary in this climate and on certain household equipment, especially Chinese stoves; another has had training and experience in care of the sick and special diet.

"We are now at the Canton Christian College, a most interesting school with an enrollment of 500 girls. I have just finished a conference with Mr. Graybill, member of the recent Educational Commission studying schools. Miss Balderston in turn is keeping busy, now having conferences with a man who is especially interested in soap industry in the chemistry department, and now conducting a series of three demonstrations with the wives of the faculty and some Chinese women.

"I thought you might like to know that one of the first magazines which I picked up in the library here was the JOURNAL OF HOME ECONOMICS."

India. The following is part of a letter from M. U. Almaula, principal of the Womans College at Ahmedabad, India, and formerly associated with Mrs. Strong.

"You will be glad to know that I have been able to popularize home economics to some extent and many have begun to take interest in the work. I have to present the subject in the vernacular, viz. Gujarati.

"It will not be out of place to inform you that we are conservative by nature and it takes time to make innovations. Our kitchen is simple, utensils few, and furniture conspicuous by its absence. The whole of cooking is done in the sitting posture; spreading the table is not literally correct with us. The food is served out in tinned brass vessels—dishes and bowls,—and partaken sitting on wooden planks with legs crossed and without the aid of forks, knives, or spoons. Some place their dishes on a low stool about a foot high. Tinned articles of food are seldom, if ever, used.

"The Hindu is a staunch vegetarian and it is no wonder if many have not handled, nay touched, an egg. His food is mainly starch consisting of wheat or such other cereal, bread, boiled rice, some pulse, and vegetables. The thin and round bread, without any leavening agent, is prepared by the quick oven process and the food is prepared and consumed daily. We have our menus, ordinary and occasional, the latter varying with the seasons.

"From the JOURNAL I learned of Mrs. Norton's interesting experiences in Constantinople."

ALABAMA

The Alabama State Home Economics Association met in Birmingham, April 13 and 14, 1922 with the following program: General meeting—Prevention of Blindness, Dr. Carris; Opportunities for Home Economics Workers, Dr. Benjamin Andrews of Columbia University. Group meetings—Homemakers, Institutional, Home Demonstration, Home Economics Teachers. Subjects of special interest to each group were presented by Alabama home economics workers.

At the business meeting it was decided to affiliate with the American Home Economics Association. The following officers were elected for the coming year: President, Mrs. Mamie Thorington, Montgomery; Vice-President, Helen Green, Auburn; Secretary and Treasurer, Jamie Henry, Ramer.

ARIZONA

The University of Arizona. The class in food economics in the University recently conducted a food forum to which housewives were invited. Practical food problems were discussed; short reports of investigations, illustrated by exhibits and charts, were presented by members of the class. Time was allowed for questions and expression of opinions after each talk. The topics of the forum were: Judging Quality and Value of Eggs Bought in Tucson. Shall we Buy Package or Bulk Food? How Many Brands and Grades of Canned Goods is your Grocer Required to Carry? Some Unusual Cuts of Meat and Their Uses; What Kind of Milk Do you Buy? Why? The Importance of Knowing Varieties, Kinds, and Quality of Apples for Household Purposes. How is the Bread You Buy Made? Some Ten-Cent Lunches and Some Fifteen-Cent Dinners.

To show the value of simple animal feeding experiments for the use of home demonstration agents, for popular public addresses on food, and for health-class teaching, certain feeding experiments were conducted in the Home Economics Department.

Six lots of white rats, three rats in each lot, each lot the same weight and age, four weeks old, were fed the following diets: I, white bread and cow's fresh milk; II, white bread and goat's fresh milk; III, white bread and coffee (very little condensed milk added); IV, white bread and lean beef (cooked); V, white bread and distilled water; VI, a control diet consisting of two-thirds whole wheat flour and one-third powdered milk and 2 per cent of the flour in NaCl.

Weekly records were kept over a period of thirteen weeks. Photographs were taken of individual rats. The striking differences in the size and appearance of each lot made a great impression on the health class of children conducted by the senior class in dietetics. In addresses before the Woman's Clubs and other groups of people this illustration of the influence of diet on growth proved most effective.

CALIFORNIA

An excellent state report of the California Home Economics Association has been prepared by Essie L. Elliott, first president of the Association under the new regional plan. It includes the regional plan and national budget, financial report, state reports by sections, recommendations, proposed amendments to the state constitution, a list of officers, and a notice of the summer meeting of the A. H. E. A. at Corvallis. This report is on file in the A. H. E. A. Office, and will be loaned to any of the newly affiliated states desiring suggestions in the preparation of a similar report. California has affiliated, with a membership of 210, and has pledged \$680 to the Executive Secretary Fund. The Association has three sections, each one having a representative on the state council which met in Berkeley, April 13 and 14.

Part of the work for the present year has been the making of a scale for measuring achievement in home economics instruction, under the chairmanship of Agnes Fay Morgan of the University of California. After further evaluation of these tests it is planned to publish them. The officers

for 1922-23 are Bertha Prentiss, supervisor of home economics in Berkeley schools, president; Florence M. LaGanke, supervisor in Oakland schools, secretary-treasurer.

The Central Section of the association met April 5 and sent resolutions to the State Superintendent of Public Instruction and the State Commissioner of Secondary Education, embodying their stand for a minimum of one unit of food and one unit of clothing for graduation from a high school maintaining a department of home economics. They further urged, for the encouragement of the profession of teaching, that advanced study and professional training be compensated proportionately to the training.

FLORIDA

Florida State College For Women.

The State Board of Health and the Home Demonstration Division are launching a cooperative piece of child welfare work. A nurse, sent out by the State Board of Health, superintends the weighing and measuring and holds a preliminary examination. Children who are sufficiently underweight to need special attention are examined before the mother, by a doctor from the State Board of Health and the nutrition specialist from the Home Demonstration division. The nutrition specialist advises on the diet, rest, work, and play, and gives the mothers a series of lessons on nutrition.

IDAHO

The Series of Movable Schools held in nearly every section of Idaho during the past two months have been characterized by large attendances and marked interest on the part of farmers and their wives. In one small town, in spite of inclement weather and bad roads, there was an aggregate attendance of 4600 at the three day session. It was the purpose of the University administration to create in the State a greater confidence in the future of Idaho agriculture and to assist the farmers in formulating their plans in the direction of a permanent and successful farm operation. In addition to representatives of the teaching force, experiment station staff, and exten-

sion service, prominent bankers and businessmen of the State, representatives of the Union Pacific Railroad Company, A. H. Upham, President of the University, and E. J. Iddings, Dean of the College of Agriculture, took part in the program.

The special programs for the women were made up of subject matter talks on Better Homes for Idaho, Women as an Economic Factor in the Home, Home Conveniences, Short Cuts in the Kitchen, The Family Dietary, Child Feeding, and Garment Construction. The speakers for the women's section were Katherine Jensen, Head of the Home Economics Department, Amy Kelly, State Leader of Home Demonstration Agents, and Wilhelmina Jacobson, Extension Clothing Specialist.

ILLINOIS

When the **Home Bureau** was organized in McLean County, in 1918, a survey was made to find out the number of children in the county who were drinking coffee and tea and the number drinking milk. The cards were sent to the grade teachers of all the schools both rural and town with the exception of the two cities, Bloomington and Normal. The reports from 3139 showed 43 per cent drinking coffee or tea every day, 19 per cent no tea or coffee; from 4069, 34 per cent drinking milk every day, 21 per cent no milk.

After three years of work in the county against the use of coffee and tea for children and advising the use of milk, a second survey was taken. In the towns 1728 reported 10 per cent drinking coffee or tea every day, 52 per cent no coffee or tea; 50 per cent drinking milk every day, 10 per cent no milk. In the country 3428 reported 14 per cent for coffee or tea every day, 44 per cent no coffee or tea; 3424 reported 61 per cent for milk every day, 11 per cent no milk.

During this time the "Hot Lunch in the Schools" project has been worked. When the work was begun six schools out of the 251 had served hot lunches; at the end of the first year 42 schools served, second year 103, third year 105, fourth year 107.

IOWA

Iowa State College. Miss Walls, Acting Dean of Home Economics, has established a series of Get Together Dinners for the division faculty and the members of other faculties who attend the monthly meetings. These are prepared and served by the Institutional Foods Classes in the Campus Tea Room.

Several of the home economics faculty are assisting in the Annual International Night presented by the foreign student members of the Cosmopolitan Club.

There is a senior elective in clothing in which design is applied to the making of childrens' clothes, not children in the abstract but actual nieces and nephews or friends. The clothing for a little red headed girl was an interesting problem.

The students in advanced dietetics are fortunate in having the opportunity to cooperate with the Red Cross nurse in the work with classes of underweight children in three of the public schools. These children are given one-half hour of instruction in diet and general health rules, weekly. The children of one group receive a pint of milk daily; in another small group they receive orange juice as well as milk. The records thus far show a gain in weight of 250 per cent of the expected gain in the group receiving orange juice and milk, 143 per cent of the expected gain in the group receiving milk, as compared with 117 per cent of expected gain in the group receiving instruction only.

The class is also making a study of the dietary habits of several Freshmen girls who are underweight. With the coöperation of the Hygiene, Physical Education, and Nutrition Departments, an effort is being made to improve the physical conditions of these students.

Story County Farm Men and Women were guests of Iowa State College on April 3. They discussed progress of county-wide projects with extension specialists. The clothing project leaders reported progress in their own townships, and were assisted by extension specialists in mapping out future work. The Farm Bureau women are

doing an excellent piece of work in carrying out the clothing project which was written by their own committee. The outline of this project is on file in the JOURNAL Office and will be loaned on receipt of 10 cents in stamps.

LOUISIANA

The Louisiana Home Economics Association held a two day session April 7 and 8, with a full program in which many local and general home economics problems were discussed by state workers. Edna N. White of the Merrill Palmer School, Detroit, spoke on Co-operative Agencies and Methods Used in Promoting Home Economics Education, and also presented some very helpful material on nutrition.

The Association voted to affiliate with the American Home Economics Association. The present membership is 101, but it is hoped to increase the number so that Louisiana will "top" the list in the Southern States. The officers elected are: President, Cleora C. Helbing, Baton Rouge; Vice-President, Minnie Lee Odom, De Quincy; Secretary-Treasurer, Flavia Gleason, Baton Rouge.

NEBRASKA

The Nebraska Home Economics Association was organized last fall and decided to affiliate with the American Home Economics Association. An all day session was held at which Helen Goodspeed of Wisconsin was the chief speaker. The following officers were elected: President, Margaret Fedde, Chairman Department Home Economics, University of Nebraska; Vice-president, Ethel Delzell, Chadron State Normal College; Secretary, Ethel Cline, Omaha High School of Commerce; Treasurer, Belle Mayer, Alvo High School.

University of Nebraska. An annual event in the College of Agriculture, is the Farmers Fair which was held this year on May 6th. A playlet pageant was presented by the women in the Home Economics Department, and demonstrations were given in all the departments.

The students in the Child Nutrition Course are doing case work with malnourished grade

school children. Most of the children come from abnormal homes, and coöperation has been established with the Social Welfare Organization and the Juvenile Court of the city. Progress is slow but the results are gratifying. In another year we hope to add a group of pre-school children and their mothers.

An added responsibility and joy of the students living in the Home Management House is Kathryn Marie, their very young charge. She was five months old when she came into this household very much in need of intelligent care. She is now ten months old, robust, active, and happy, convincing those who were doubtful of the results of this experiment.

Leaders' Training Groups in the making of dress forms, sewing machine attachments, dress construction, and millinery work have been held in several counties by Miss Legg and Miss Harris, clothing and millinery specialists of the Extension Service, College of Agriculture. The delegates to these schools later hold similar demonstrations in their own communities. This is proving to be a successful way of developing local leadership and spreading better clothing instruction.

Miss Atwood, nutrition specialist, is doing nutrition work in hot school lunch and nutrition classes with county Red Cross nurses. A canning budget project is being prepared for various counties.

Mary Ellen Brown, Assistant Boys and Girls Club Leader, and Miss Murphy, Home Health and Hygiene Specialist, are trying out a set of "Keep Well Club" problems in six clubs. Daily Health Habits are encouraged by a special record book, and demonstrations and exercises are practiced.

Miss Murphy is holding Child Welfare Conferences in some communities where there is no resident county nurse. The local doctors give their services and many mothers and babies are reached.

Nebraska Wesleyan University, a denominational College, lays special emphasis upon the training of students for the Ministry, missionary activities, and social service work. The Home Economics Department at present has ninety-two students en-

rolled, a number of whom are preparing themselves for some definite line of Christian service. They are electing such courses as dressmaking, millinery, house furnishing, and food study, as part of the necessary preparation for the practical side of their social service work.

NEW ENGLAND

The New England Home Economics Association met on Saturday, March 11, at the Boston Public Library Lecture Hall. The Dietitians' Section had charge of the meeting and centered the program around foreign food customs. Bertha M. Wood of the Food Clinic of the Boston Dispensary spoke on "A Study of Racial Customs in Diet." There was an exhibit of foods and kitchen utensils of foreign born people.

A week later the Teachers' Section directed a special meeting where Helen Bridge spoke on "Methods of Teaching the Division of the Family Income."

The association is actively campaigning for a one hundred per cent membership in the American Home Economics Association.

The Massachusetts Institute of Technology Women's Association held a tea March the tenth. Professor Samuel C. Prescott spoke on "How to Make Coffee."

The Graduate School Of Education of Harvard University is ready to offer a course in the Administration of Home Economics Education in the summer session, July 10-August 19, if there are enough students who apply for it. This course will be designed to meet the needs of superintendents, principals, home economics supervisors and teachers, and all others who are interested in studying this important phase of women's education.

A second course for home economics teachers may be offered if the demand warrants. This would cover detailed studies of special phases of Home Economics education, such as: methods of teaching the division of family income, related art in the home economics program, job analyses of home management, and the teaching of child care and development.

Notification of your desire to enroll should be sent *promptly* to Dean H. W. Holmes, Lawrence Hall, Harvard University, Cambridge 38, Massachusetts.

NEW MEXICO

The Circuit Plan Of Vocational Home Economics is proving beneficial to two of the counties of New Mexico. By this arrangement several small rural schools, otherwise unable to provide instruction along this line, are enabled to offer a course in homemaking, taught by a competent instructor.

One of the circuits has five schools; the other four. The teacher spends an entire day each week with each school, giving instruction in actual practice. Supplementary work is given the other four days of the week by the regular teacher in charge.

Service is the keynote of all the work. Many of the girls are of Mexican descent and the instruction given must be fitted to their own particular needs. Work as taught in the average high school would be practically valueless to them, because they could not apply it to their home life. The clothing made is of the simplest, most practical type. In some cases the girls would have been unable to attend school were it not for the dresses of unbleached muslin made by themselves under the instruction of the teacher. In one school aprons were made from flour sacks, attractively bound and appliquéd in colors. The instruction in cooking emphasizes such vegetables, fruits, and meats as are available.

Equipment is elementary, and funds for maintenance of the work are scarce; but the communities are realizing the value of the instruction and Parent-Teacher Associations have donated funds for cooking supplies. The girls have given entertainments to procure money for a sewing machine.

The Home Economics Department of Albuquerque High School has purchased a new hemstitching machine. A charge of five cents a yard will be made until the machine is paid for. Thereafter, its services will be free to the students of the department.

Millinery Clubs have been established through the coöperation of Miss Neiman, instructor of domestic art of the New Mexico A. & M. College, and the county home demonstration agent. Courses of instruction are given in the making and remodelling of hats.

NEW YORK

Teachers College. The departments of nutrition and physiological chemistry of Teachers College have received a grant of \$2000 from the Fleischmann Company for a study of breads from the nutritional and vitamin standpoint. Louise Kipp has been appointed on this grant as special assistant.

The department of physiological chemistry is participating in the work on rickets which is being developed by the department of pathology of Columbia University. It has been assigned the task of determining the relative efficiency of some of the sources of phosphorus as they appear in ordinary diets. Results to date show that phosphorus in the form of phytin is only half as efficient as phosphorus in inorganic combinations.

The departments of physiological chemistry and of cookery are cooperating on a series of studies, which have shown to date that cooked cabbage suffers a very serious loss of scurvy protection power as a result of cooking.

The results reported by Dr. Eddy are published in the Proceedings of the Society for Experimental Biology and Medicine.

NORTH CAROLINA

The State Home Economics Association meeting was held in Greensboro, March 24th and 25th. The president, Eunice Chaplin of the Durham High School, presided. The Association voted unanimously to accept the new plan of affiliation, and to increase the state dues in order to have at least one out-of-state speaker at the annual meetings. Three sectional meetings were held; Homemakers and Extension Section, Mrs. Jane S. McKimmon, State Home Demonstration Agent, presiding; Institutional Section, Hope Coolidge, Dietitian at North Carolina College for

Women, presiding; Teachers Section, Blanche Shaffer, Dean of Home Economics, North Carolina College for Women, presiding.

Friday evening the conference was entertained at a banquet at the North Carolina College for Women. Dr. Benjamin R. Andrews of the Home Economics Department of Teachers College, Colombia University, spoke at the general session on Home and Our Ideals in Regard to the Home, and Mollie Peterson of the North Carolina College for Women gave a talk on the Psychology of Dress.

The following officers were elected for the coming year: President, Mrs. Warren H. Booker of Queens College, Charlotte; Vice-President, Louise Moore of the Sanford High School; Secretary and Treasurer, Mrs. Ola Wells, County Home Demonstration Agent, Greensboro; State Councilor, Blanche Shaffer, Dean of School of Home Economics, North Carolina College for Women.

The Vocational Home Economics Teachers met on the day preceding the State Home Economics Association meeting. The State course of study was the main topic under discussion; after a year's trial the necessary revisions and adjustments were discussed and plans made to publish it before the beginning of the next school year. Dr. L. B. McBrayer, Director of Bureau of Tuberculosis, State Board of Health, was present at this meeting and talked on Malnutrition of School Children in North Carolina. A number of home economics teachers reported on their plans for linking their class room work in nutrition with the work of the county health nurses by organizing nutrition classes in the grades.

OHIO

The Ohio Home Economics Association held its spring meeting at Columbus, March 25, the president, Mrs. Blanch B. Bowers, presiding. At the morning session Sarah J. MacLeod, Home Economics Department, Society for Savings, Cleveland, gave a practical talk on Budgeting. This was followed by a brief business meeting.

At the afternoon session, Harry H. Howett, Division of Charities, Department of Public Welfare, told of the work the Children's Bureau is doing in Ohio and Mrs. Norma Selbert of the Department of Medicine, Ohio State University, talked on Teaching Hygiene to Children.

The Association has a membership of ninety, and the meetings were well attended.

PENNSYLVANIA

The report of the **Survey of The Public Schools of Philadelphia** by Dr. Finegan, Superintendent of Public Instruction of Pennsylvania, contains the following statements:

"Since eight out of every ten girls in Philadelphia will take up the vocation of homemaking some time in their lives, no educational program is complete that does not make adequate provision for the instruction of these girls along lines which shall fit them for their responsibilities in life.

"In high schools of the city at the present time there are being offered four year curriculums in home economics. This does not meet the needs and there should be offered unit year elective courses for every girl in any curriculum."

At the meeting of the **Philadelphia Home Economics Association** Saturday, April 1, Dr. Walter T. Taggart spoke on the Application of Chemistry to Home Economics.

TENNESSEE

The Tennessee Home Economics Association has recently been organized, uniting the three sections formerly existing in the state. Affiliation with the American Home Economics Association will soon be completed. At the last meeting the following officers were elected: President, Mary Gaut; Vice-president, Bessie Henderson; Secretary, Mrs. Hattie F. Wendel; Treasurer, Carrie G. Scobey.

UTAH

Project Leader Training. The special courses for training project leaders conducted

by the State Extension Service of the Utah Agricultural College during two weeks in January mark another mile-stone in the progress of extension service in coöperation with county and community Farm Bureau organizations in the state.

Forty-two project leaders, representing twenty-eight communities and eight counties, threw themselves eagerly and enthusiastically into the task of learning to "extend extension." Each leader, according to project regulations, was sent as a delegate by her respective organization. She was required to spend full time in concentrated work in at least one and not more than two projects, and to pledge herself upon her return to her community to take the initiative in the development of definite project activities under the further supervision of the state extension specialists and the county extension agents.

The Farm Bureau organization paid the traveling and living expenses of their leaders.

The project courses included Food for the Family, Infant and Pre-school Child Feeding, Clothing for the Family, Costume Design, Home Health and Nursing, Farm Butter and Cheese Making, Poultry Management, Beautification of Home Grounds. Recreation programs were provided each evening. These included lectures, picture-shows, social evenings, community songs, and games.

NATIONAL

Social Service—A Profession. Social service now has a professional organization in the American Association of Social Workers, 130 East 22nd Street, New York. Between fifteen and thirty thousand people in the United States are engaged in some kind of professional social service. In a draft of membership requirements, recently prepared by the new Association's Executive Committee, nearly forty fields are enumerated in which men and women "trained in social science and technique are eligible for admission."

To qualify for senior membership according to the proposals of the executive committee, one must be at least 25 years of age, a college graduate "or have demonstrated by practical achievements an equivalent

educational background," and have had four years' experience in social organizations of recognized standing. One or two years in a training school for social work would be equivalent to practical experience for the same length of time. Graduate work in social science is also made equal to one year of practical experience. Provision is made for two other classes of members in which the standards are less strict than for senior members.

Home Canners' Association. Home Economics workers have much in common with the Home Canners' Association which recently held its third annual Convention at the Sherman Hotel in Chicago. The attendance was fair, the program was excellent, and there was a spirit of enthusiasm which augurs well for the future of the organization.

The Home Canners' Association is organized for the purpose of bringing together women interested in home or community canning, gardeners and fruit growers who produce materials to be canned, manufacturers of home canning equipment, extension workers who are interested in the groups that wish to organize to do canning work in the home, and trained people interested in the subject matter involved in successful preservation of foods in the home.

Here is an opportunity for home economics people to make a contribution to groups that want the information they are best prepared to give, i.e., the relation of the canning industry to the proper nutrition of the family, and at the same time to get the most authentic information as to available equipment. The association will hold its next annual convention in Chicago, March 1923. It is hoped that more home economics women will attend.

NOTES

Beulah Coon, state supervisor of Home Economics Education in Arizona for three years, is now head of the teacher training department in the University of Nebraska.

Mrs. Kate Kinyon has succeeded Rose Shonka as Supervisor of Home Economics in the Lincoln public schools. Miss Shonka is now in the teacher training department at Berkeley, California.

REPORT OF THE MEETING OF THE COUNCIL OF THE AMERICAN
HOME ECONOMICS ASSOCIATION¹

CHICAGO, MARCH 1 AND 2, 1922

Present: Mary E. Sweeny, presiding; Ada Field, Faith Lanman, Mildred Weigley, Grace Frysinger, Marie Sayles, Katherine Blunt, Helen Atwater, Margaret Sawyer, Ruth Wardall, Carlotta Greer, Mrs. Mary Bryan, Mrs. Henrietta Calvin, Edna N. White, Minna Denton, Frances Swain, Jenny Snow, Anna Richardson, Nina Streeter, Sybil Woodruff.

In the absence of Lenna Cooper, Louise Stanley acted as secretary. The minutes of the last meeting were read and approved.

Ellen H. Richards Memorial Fund. Report submitted by Dr. Andrews. The Fund shows receipts for the year of \$810; expenditures \$200 as a contribution to the Constantinople professorship, and a net balance, \$6510.04; anticipated income for 1922, \$302.29. The \$300 that will accrue is to be spent for special lecturers at the Corvallis meeting.

Journal Board. Report submitted by Mrs. Mary de Garmo Bryan. The increase in subscriptions for the year 1921 shows 481 students, 836 regular, or a total increase of 1317. 605 members of the Association do not subscribe to the JOURNAL. Special efforts to secure subscriptions, October–December, 1921: 4355 direct appeals for subscriptions, mailed to individuals; 41 letters and packages of circulars to state associations for subscription campaign; 75 letters with circulars enclosed to heads of home economics departments in colleges; exhibit at American Dietetic Association meeting; samples and circulars sent to state and other meetings; circulars also mailed out with regular correspondence.

Subscriptions received October 18, 1921–January 25, 1922: 1117 new, 441 renewals of those who had been cut off; total 1558, in addition to unexpired renewals.

The financial statement is included in report of Finance Committee. In 1921, 13 issues of the JOURNAL were paid for. If only 12 had been paid for the surplus would have been over \$1000 instead of \$114.

The Board submitted the following recommendations in regard to the appointment of additional associate editors: Institution Management, Mabel Little, University of Wisconsin, Madison; Home Economics Education, Enma Conley, Albany, New York, to act as co-editor with Miss Winchell, to stress particularly elementary and secondary school interests; Homemaking, appointment left to the Editor of the Journal and the President. Mildred Weigley was appointed.

Legislative Committee. Report submitted informally by Miss Stanley. The Purnell Bill was discussed: the Council voted to endorse it as an agricultural bill, but not as a substitute for the Smoot Bill. The Chairman was requested to ascertain from the promoters of the Purnell Bill the possibility of making the Smoot Bill an amendment to this Bill.

International Committee on Teaching of Home Economics. Report submitted by Helen Atwater. In response to the request of the International Federation of Home Economics Instruction the Committee recommended the appointment of a delegate to the International Congress and suggested Miss Winslow, now in London, as the appointee. A second delegate would be desirable. Requests for contributions to the program were received so late that only one had so far been secured. Material for exhibit is in preparation.

The Committee also recommended the appointment of a home economics representative to attend the meeting of the International Federation of University Women to be held in Paris, July 15–18.

Program. A brief report on the program for the summer meeting submitted by Miss Milam for Miss Davis, chairman. The relation of section programs and general program was discussed. It was the interpretation of the Council that section chairmen were to be responsible for their own programs and the Program Committee was to be responsible for the general meeting.

¹ Business in full, but only summaries of committee reports.

Finance Committee. Report, submitted by Sarah MacLeod, included Treasurer's report, auditor's statement, budgets, and comments. Receipts of at least \$3,000 must be assured if the Association is to function as it should. The 1921 report for the Association shows a deficit of \$819.89, due mainly to the cost of publishing the Proceedings of the June meeting and to the \$234.57 spent by the Legislative Committee. The operations of the JOURNAL showed a surplus of \$114.00. The cost of maintaining and running the office has been kept remarkably low and in practically all these items the expenditures have fallen below the allowances.

SUGGESTED BUDGET FOR 1922

ASSOCIATION

<i>Receipts</i>		<i>Expenditures</i>	
Dues.....	\$3,000.00	Salaries.....	\$975.00
Sales.....	5.00	Travel.....	200 00
	\$3,005.00	Meetings.....	125 00
		Bulletin and	
		Proceedings ..	1,000 00
		Rent.....	48.00
		Telephone and	
		telegraph.....	50.00
		Postage	100.00
		Printing, stationery and	
		office expense	150 00
		Advertising.....	50 00
		Committees.....	100 00
		Surplus.....	207 00
			\$3,005.00

JOURNAL

<i>Receipts</i>		<i>Expenditures</i>	
Subscriptions	\$16,150.00*	Salaries and	
		clerical.....	\$4,400 00
Numbers.....	300.00	Travel.....	300 00
Reprints.....	100.00	Rent.....	192.00
Advertising.....	4,000.00	Printing and	
Books.....	10.00	distribution ..	14,000.00
	\$20,560.00	Telephone and	
		telegraph	50 00
		Postage	400.00
		Printing, stationery and	
		office expense	600.00
		Advertising.....	100 00
		Surplus.....	518 00
			\$20,560 00

* Based on estimate of 6000 regular subscribers, 1400 students, and \$600 discount to agents.

Inter-relation Committee. No report. Emma Winslow, chairman, resigned because of absence from the country. Lydia Roberts was appointed.

Membership Committee. The President reported that this committee had no chairman, that members of the Committee had been canvassed, and that the appointment of a chairman was referred to the Executive Committee.

Research Committee. Report submitted by Dr. Denton. The research committee has initiated the organization of the following sub-committees: (1) Home Economics Research in Food Chemistry and Physiological Chemistry, Agnes F. Morgan of Berkeley, California, chairman; (2) Field Investigations in Nutrition, Elizabeth Roberts of Chicago, chairman; (3) Clothing and Textile Investigations, Grace Denny of Seattle, chairman; (4) Research in Home Economics Education, Anna Richardson, of Washington, D. C., chairman.

Each of these committees shall undertake to outline standards for research in its own field, to suggest research projects in that field, and to abstract or to list unpublished research theses bearing upon its subject matter.

The Research Committee recommends: 1. That the Association endorse the following qualifications as essential in college faculty members who assume charge of, or responsibility for, research work prosecuted by home economics students: Graduate courses and research work equivalent to that required for a doctor's degree, if this be possible, otherwise, one or two years of work in some graduate school of recognized standing, together with evidence of the successful prosecution of original investigation in the form of written or published reports of such investigation; the "research attitude of mind" on the part of the applicant, which this committee considers more important than any formal test of fitness. 2. In case the Association shall see fit to endorse the above recommendation this committee asks that the secretary be directed to send copies of the resolution to presidents or deans of state universities and land grant colleges, and to heads of home economics departments in these institutions.

Publicity Committee. Report by Harriet Mason. Arrangements have been made with the Newspaper Enterprise Association and with the Central Press Association which furnishes copy to local dailies and weeklies in the Mid-West, for their use of some material pertaining to the activities, interests, and personnel of the American Home Economics Association.

The chairman of the special travel committee has agreed to furnish copy to the JOURNAL and data for the general publicity committee. Miss Feike, who assisted Miss Milam in reporting the Colorado Springs Convention, has agreed to direct the publicity of the convention for the press of the Northwest.

The members of the committee have been giving such publicity as they could, in their respective fields, to matters concerning the Association. The federal home economics appropriation bill has been featured.

Regional Committee. Report submitted by Mildred Weigley. The report showed that 16 states had voted to affiliate and 7 had completed all requirements.

The Southern Region wished the Council to consider the following points: Change in the constitution so as to permit nominations from the floor; statement of advantages of affiliation; biennial conferences in the Southern Region to be partially financed by the A. H. E. A.; the Annual Meeting of the A. H. E. A. to be held in the South every five years.

Voted that the question of this method of nominating officers be submitted in writing to the National Association a month before the Annual Meeting; that the southern Association be informed that the interpretation at the Swampscott meeting was to the effect that the annual meetings were to rotate regionally; that action on financing meetings be tabled, since the Association is not financially able to make pledges at this time. The Council expressed itself as being in sympathy with the regional meetings.

The committee asked for action in regard to transfer of membership from one state to another and in regard to time at which affiliation fees fall due.

Voted that states make the necessary adjustments for membership in their own states, that memberships run from July 1 to June 30, and that affiliation dues be sent to the National Association not later than January 1.

In discussing advantages of membership through affiliation it was decided that all A. H. E. A. committees should work through state associations and that names for state appointments be submitted to the executive committee of the state association for approval. It was also voted to print the Proceedings as an extra number of the JOURNAL if possible.

Executive Secretary. No written report received from the Chairman of the Fund Committee, but in a personal interview Miss Matthews had reported pledges totaling \$4000. In response to Miss Matthews' request it was voted that the funds for the Executive Secretary be banked in Lafayette, Indiana, until the annual meeting.

The President emphasized the necessity of assuring financial support, and referred to the question of the term of years and the salary scale.

Voted that a committee of three be appointed to develop a plan for underwriting the salary of the Executive Secretary for two years. The Council considered it undesirable to make any pledge regarding an increase in salary, but agreed that the Executive Secretary would have one month's vacation.

Names suggested by Council members were considered. The choice of the Executive Secretary was again referred to the Executive Committee.

Committee on Standardization of Home Economics Institutions. Report submitted by Miss Atwater. The Committee has been in correspondence with most of the more important accredited agencies. Confusion increases as one looks further into the question. It is clear that the time is ripe for a serious, thorough-going attempt to suggest some uniform statement of what should be expected from institutions of different types in which home economics courses are offered. The Committee sees three possible types of agencies by which such work might be done. I. Association of Professional Workers—in this case the A. H. E. A. Two objections: 1. Personnel of Association is such that work would necessarily fall largely on women very closely associated with the institutions under consideration. 2. To be satisfactory, work will require not only time but also funds. II. Association of Institutions. Method employed by social service schools and recommended to us by Miss Breed. Same objection to it as to I, 2. III. Educational Institutions. Two possible ones, Carnegie Foundation and American Council of Education; latter has committee on college standards. This committee might possibly be willing to undertake the work, in association with persons appointed or suggested by A. H. E. A. Voted that the Committee be directed to communicate with the American Council of Education and report to Miss Nardin before the April meeting of the American Association of University Women.

Travel Committee. Miss Streeter reported the work of the Travel Committee. Voted that the railroads be allowed to use the membership list of the American Home Economics Association, but that material issued should be submitted to Miss Streeter; that they circularize the American Dietetic Association; that they be advised to circularize about the middle of May. The Council disapproved of any expenditure to cover lists of JOURNAL subscribers to be given to the railroads.

Voted that the Travel Committee be enlarged by appointment of members in the states and in large cities and that Miss Streeter be empowered to choose these members at once, that an Advisory Committee be appointed from those members of the Council resident in Chicago.

Suggested that Miss Streeter communicate with the women's divisions of the Associations of Commerce at points included in the western trip.

Committee to Promote the Journal. Report submitted by Miss Kauffman, read by the Secretary. Up to this time there are no results to report as the plans have just been formulated for the following line of procedure: 1. To study definite needs of the JOURNAL, improving

its content so as to be of interest to all groups in the field of home economics. 2. To increase the number of subscriptions. Sub-chairmen have been appointed to work in the following states and regions: Antoinette Roof, Simmons College, New England States; Edith Chace, State College, Pennsylvania; Edna McNaughton, College Park, Maryland; Jennie Bear, Dover, Delaware; Frances Tomer, New Brunswick, New Jersey; Edith Thomas, Raleigh, North Carolina, Southern States, including Southern Home Economics Association and Texas, Arkansas, and Kentucky; Grace P. Gillett, State College for Teachers, Albany, New York; Rachel Colwell, University of West Virginia, West Virginia; Alice Biester, University of Minnesota, Middle West States; Dorothy Shank, Olympia, Washington, Western States. The sub-chairmen will formulate plans for procedure in their states.

Miscellaneous: Voted that a committee of two be appointed to formulate the objectives and a program of work for the Association and that this report be made at the annual meeting.

Mrs. Bryan, Editor of the JOURNAL, requested direction from the Council as to whether the proceedings of this Council meeting should be published in full. Voted that extracts of reports and the business in full should be printed in the JOURNAL.

Voted that the amount of money given by sustaining members be regarded as a contribution and that the usual membership fee is expected in addition.

Voted that, in order to place the present memberships on a regular basis, members be asked to pay the amount due to July 1, 1922, on a pro rata basis of 50 cents per quarter.

Attention was called to the need for certain changes in the Constitution to make the meaning clear. Voted that the rewording of the Constitution be referred to the Executive Committee.

The resignation of Edith Thomas as Chairman of the Committee to Study State Supervision of Home Economics was received with regret. Filling of the vacancy was referred to Miss Snow, chairman of the Home Economics Education Section.

The request of the American Academy of Political and Social Science for three delegates to be sent to their conference in Philadelphia, May 12, was referred to the President with power to appoint the delegates.

The suggestion of Agnes Harris, that the Association have present a representative at the Biennial Meeting of the General Federation of Women's Clubs, to speak three minutes regarding the work of the Association was presented and referred to the President with power to act.

The President reported that the Association has availed itself of the invitation to take part in the Public Health Exhibition, Brooklyn, October 5-14, 1922. At the suggestion of Elizabeth Condit, Pratt Institute, who has been asked to represent the Association in making arrangements, it was voted that the Council request the Home Economics Association of Greater New York to take over this exhibit and to see that the Association was adequately represented. Voted that a Committee on Exhibits be appointed to handle similar requests until the Executive Secretary be appointed.

Voted that Anna Richardson be requested to represent the Association on the Joint Legislative Committee.

Voted that the President be empowered to appoint an alternate for Dr. Ruth Wheeler on the sub-committee on Food and Nutrition of the National Child Health Council.

Voted that the Association advise the discontinuing of the Home Economics Section of the Western Arts Association.

Voted that a committee on tests be appointed as a sub-committee of the Home Economics Education Section.

The Council approved of appointing as representative councilors, Frances Swain, Illinois Home Economics Association; Blanche Shaffer, North Carolina Association; and Mrs. Myrtle Cole, North Dakota Association, affiliation having been completed and the names of their representatives having been submitted in due form by the state associations.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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VIEW OF KITCHEN LABORATORY AND BEDROOM OF FLAT, NEW YORK SCHOOLS
See p. 320

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BOTANICAL INSTRUCTION FOR STUDENTS OF HOME ECONOMICS

J. E. KIRKWOOD

Professor of Botany in the State University of Montana

The relation of plant life to human welfare is too obvious to merit comment. The appreciation of this relation, however, seems strangely inadequate in present schemes of education in which liberal culture is content to continue in ignorance of those things most intimately involved in our daily life and activities in all their relations. It is, therefore, with a distinct sense of gratification that we view the reorganization of courses in home economics at once broadening their field and enhancing their influence by making some practical botanical knowledge a fundamental requirement.

The course in botany for students of home economics at the State University of Montana aims at two things: first, instruction in the nature of the plant as an organism, with emphasis upon some of the lessons from the life of the plant which are of broadest import; second, the presentation of a body of information on the nature and sources of the most important products of the plant world. Following is a statement of the content of such a course in its general outlines.

Following an introductory lecture on the fundamental properties of living matter as manifested in plant life, the course opens with a study of the leaf. Three functions are considered in this connection. Experiments are performed to demonstrate transpiration, respiration, and photosynthesis. The structure of the leaf and its relation to these functions is explained. Special emphasis is laid upon photosynthesis as the source of starch and sugar with a strong background in the lectures as to its cosmic importance. It is thought that the introduction, at the start, of a topic of such significance fixes at once the attention and interest of the student and claims the respect due to the subject. The role of water in plants, revealed in part by the phenomenon of transpiration, opens the way to a brief reference to the influence of moisture in

the distribution of vegetation, and, in connection with respiration, appears an opportunity to point out the ultimate likeness and meaning of the function in all living organisms.

The study of roots furnishes an introduction to the study of absorption and the osmotic forces involved. It also opens up the subject of the subterranean parts of plants as storage and propagative organs and leads to the consideration of the soil as the source of certain constituents of the plant body.

The stem is considered mainly in its structural aspects and modifications. The differentiation of its tissues and their identification as a basis for future treatment of textiles and other products furnishes the principal motive, with the function of storage of various materials as secondary. Here also may be presented certain forms of vegetative propagation and the horticultural practices of cutting and grafting.

Seeds and seedlings are treated as in the usual course in elementary botany. The microscopic examination of reserve foods such as starch, alcurone, oils, the recognition of various forms of starch grains, and the constitution of starch and other food materials are emphasized. As much time as can be spared at this point is devoted to the three main classes of foods, viz., proteins, carbohydrates, and fats, and the tests for their recognition. In connection with the seedling, enzymes and digestion are stressed especially in lectures and demonstrations. The morphology of the seed and the course of events in its development are touched lightly.

The structure and functions of the floral organs convey the lessons of fertilization and reproduction. Some emphasis is laid upon cross and self-fertilization, the significance of variation and salient facts of natural and experimental evolution. Here is introduced the subject of plant breeding in its horticultural and utilitarian aspects. The extent to which the improvement of field, garden, and orchard crops has been conducted and a glimpse of the methods employed are always of interest and the information is usually received by students as revealing an eminently practical and obviously valuable field of human endeavor.

As a conclusion of Part I the mode of classification of plants is briefly presented. Here is discussed the meaning of orders, families, genera and species and an effort is made to convey some conception of the basic principles involved in the distinctions of the various taxonomic ranks. This treatment also furnishes the introduction to Part II, which considers the economic plants largely from the standpoint of their family relationships.

In discussing the economically important families, their botanical characters are presented first. No effort is made in this course to emphasize generic and specific distinctions, but the significant marks by which the family is recognized and the structural features, tissues, or organs involved in the product are deemed worthy of special consideration. The geographic range and particular habitat features, especially of the important genera or species, also receive attention. With reference to the economic aspects of each group, the following points are usually presented: (a) the economic significance of the product, (b) the most important properties to which the value of the product is due, (c) the methods of production and utilization, (d) the center of the world's production, and (e) something of its history and development. Other features may be included as circumstances warrant.

The study of the economic plants begins with the cereals. The structure of the flower and development of the grain are traced in the wheat and maize only, but the more obvious distinctions between the ears of wheat, barley, rye, oats, rice, and sorghum are shown, with reference also to the seed, fodder, and broom sorghums and forage grasses. The primitive races of wheat are outlined and their relation to present day varieties considered. Attention is paid to the aleurone and starchy tissues of the grain, chemical composition and gluten content, practices in milling, and the relation of climate and agricultural practice to the quality of the flour. Similarly, maize and rice, their history and culture, the more important races, their composition and products are outlined.

The palm family affords points of interest in connection with the production of food materials of various kinds, fats for cooking and butter substitutes, fibers and other articles. Nuts are also considered in their respective families, especially walnuts, hickories, chestnuts, and almonds.

The larger fruits included are mainly those grown in north temperate latitudes, with the exception of the fig and date. The cultural methods employed, the earlier history and the more recent results of breeding and selection make this subject one of unusual interest. The various races of citrous, pomaceous and drupaceous fruits furnish good illustrative material for the study of horticultural genetics as well as important products from the economic standpoint. The smaller fruits, the berries commonly cultivated, including strawberries, blackberries, raspberries, currants, gooseberries, blue-berries, and cranberries, receive attention mainly from the botanical standpoint and family relationships.

In the pea family, in addition to the garden peas and beans, attention is directed to the soy bean and its numerous products. In the treatment of this and related leguminous groups much time may be spent if available, at the discretion of the instructor, but in a short course it seems best to abbreviate this topic in view of the claims of many other important subjects.

The principal garden vegetables and savory herbs are considered under the four families, Cruciferae, Umbelliferae, Solanaceae and Labiatae. This should be extended to include the Cucurbitaceae and some others if time will permit. In connection with some of these groups reference is made to well-known weeds and cultivated flowers and the prevalence of indigenous species in the local flora. Here it is also convenient to point out the nature and properties of volatile oils and their relation to affairs other than the preparation of food. The family characters are so distinctive as to be easily presented and comprehended, and are the more important, being considered in relation to familiar objects.

In the textiles, cotton and flax are the only subjects receiving much attention. In the case of cotton its history and distribution are considered, and the production of the lint and its treatment. In addition to the textile products, reference is made to the manufacture of gun-cotton, collodion, vegetable silk, and other materials. Flax is followed from the field to the loom and the exact characters of the fiber presented in lecture and laboratory. The difference between seed flax and fiber flax is set forth and the geographic range of the latter presented both as to cultivation and manufacture.

The production of sugar from cane, beets, and maple sap is followed through the process of its manufacture. The conditions attending the growth of cane and beets, the volume of the product and the climatic and other factors governing the crop are pointed out. Here also are emphasized the botanical aspects of the subject in the relation of sugar to photosynthesis and the nutrition of the plant and the advancement in sugar content accomplished by selection.

Beverage plants producing tea, coffee, and chocolate constitute another chapter in the course. The preparation of the market article and the significance of the various grades, the cultivation of the plants, their identification and the parts involved are regarded as important. This lesson furnishes a convenient point for a brief excursion on the subject of alkaloids. Here again is presented the relation of climate to the geographic distribution of the crop.

Although previous reference touched upon the subject of fats and oils, their great importance from the standpoint of various industries as well as their use as foods justifies a special period devoted to their study. The drying, semidrying, and non-drying oils for paints, varnishes, salads, cooking, lubricating and the like, the consideration, briefly, of olives, cotton seed, peanuts, rape seed, china nuts, and castor oil seeds and various other sources of oils, all contribute to make this one of the most important topics of the course. Here may be considered the production of copra, and, if more convenient than elsewhere, the essential oils.

Under gums are presented, chiefly rubber and guttapercha. The production of rubber in commercial quantities from several different plants and from at least two different tissues and its vast importance from the standpoint of utility and wealth render its discussion a matter of considerable importance. The development of the industry and its methods, the geographic sources of the raw rubber, the significance of the gum as a vegetable product, are treated as fully as time will allow.

In a brief allusion to forest products, particularly of the United States, some statistics are given as to the three main classes of materials, viz., lumber, pulp and paper, and distillation products. A brief discussion as to the manner of production and of the nature of the tissues and structures involved, together with a list of the principal trees in the order of their importance, constitutes the main line of treatment. It is also considered desirable to point out the centers of production of the various commodities and as far as possible to indicate some of the distinguishing marks of the most important genera.

Thus far the course has dealt only with the seed plants, which certainly outclass all others in respect to their contributions to human needs. Nevertheless some time is profitably spent on the study of fermentative organisms, the bacteria and fungi. Most of this, however, is summarized in lectures. The main importance of the fungi consists not in any positive contribution but in what they subtract from the sum total of material wealth by destroying crops, foods, forests, and structural timbers.

The time devoted to the course as above outlined is three months, with three lectures and two laboratory sessions per week. The first month is devoted to Part I, the second and third to Part II. The course is presented to freshmen without prerequisite. The writer feels that the time allotted is entirely too short for more than a superficial view of the subject. The aim, however, is more informational than discip-

linary and the effort is made to condense into the one term as large a body of fact as possible, as a basis for subsequent work on foods, textiles, and other subjects in the curriculum of home economics. Nevertheless, the desirability of attempting so much in so short a time may be questioned.

No text-book adapted to such a course is available. For the first part reference is made to standard elementary texts; for the second, to government bulletins and monographs. Sargent's "Plants and Their Uses" is very helpful, but contains much material not pertinent to our purpose and omits much that is needed.

The laboratory work takes the form of exercises on the plants discussed in the lecture, as far as such plants are available, i.e. the study of flowers, fruits, and other parts, identifying the families, and also a study of the particular tissues involved in the special products wherever practicable. Thus a study of the microscopic structure of the wheat kernel is required in connection with cereals, of bast fibers of flax and lint of cotton in connection with textiles, of the flower structure in the case of the mustard, carrot, and mint families. For the first part of the course the usual laboratory exercises for elementary instruction in botany are all that are required.

FACTORS TO BE CONSIDERED IN PLANNING THE ESTABLISHMENT OF A CAFETERIA

MARGARET A. PROCTOR

Secretary for Cafeterias, National Board, Y. W. C. A.

The lure of the tea room as the royal road to success is appealing more forcefully than ever before to ambitious business women. Too many plunge into the undertaking without fully understanding the fundamentals that govern the business, and without giving sufficient study to the problems that must be met. The satisfaction of being able to serve good, home-cooked food, with or without the altruistic aim of helping thereby to better the community, and, at the same time, making the project a financial success, is the ideal that inspires many efficient business women in undertaking a venture of this sort. They have a

preconceived idea of the type of restaurant with which they would like to be identified, but too often they fail to take into consideration the kind of food shop that will be best adapted to the actual needs of the community and the importance of choosing the location carefully and studying the requirements of the potential clientele.

This article attempts to outline the policy to be followed in making this decision, the methods to pursue in financing the undertaking, the importance of studying both the plan and adaptability of the equipment, together with some particulars in regard to the qualifications of the manager.

A good food shop is an asset toward establishing the well-being of the community, and is undoubtedly a necessity from the health point of view. This is being constantly proved by the demonstrations that have been and are being successfully operated in many places. The numbers and types of food shops that will have to be provided to satisfy the local requirements have not yet been exhausted. The communities themselves are awake to the need for and value of good food as part of their daily program, but in order to decide whether or not a food shop should be established in a community, as well as the type that would seem to satisfy the demand, a survey of the community itself must first be made. The town must be studied from many angles to determine:

The area and arrangement of the business district.

The transportation facilities.

The type of restaurants already established.

The proportion and groups of non-resident population.

The necessity for a good eating establishment.

The inclination or disinclination of the people to eat away from home, at noon especially.

The custom of eating the noon meal down town as a regular practice.

The number and location of the different factories or other commercial business houses in the community.

The proportion of foreign-born employed.

It is necessary to consider very carefully the question of area and arrangement of the business district. Scattered or concentrated shopping centers, natural interruptions, as hills, rivers, or railroad tracks, are subconscious but very vital points that will be reflected in the number of patrons who can make use of a given center in a limited period of time. The available transportation facilities and their use are prime factors in determining the existing need and the choice of location.

For instance, if a street car line goes from one end of the town to the other, joining two outlying thoroughfares to the central business section, it will naturally draw people from the outlying districts to the center. If there are many traction lines the busy centers will be less congested but more numerous. The possibility of uniting them through such a common interest as a restaurant, depends upon their proximity to each other without such possible barriers as intervening railroad tracks. The local use of motor cars should be taken into consideration; the business people of some towns use their motors to go home for lunch. In certain towns their homes may even be within easy walking distance.

The type of restaurants already established should give an indication of the kind of food that the public is either tolerating or demanding. The number of employed foreign-born people must be considered if they are the predominating group, for it will be necessary to satisfy their dietary customs which are more than personal idiosyncrasies. Another point that will be learned from the restaurants already established will be the number of meals provided each day and the hours of service, whether continuous or intermittent. The study will show that the meal hours are adjusted under one of the following arrangements: 5 meals a week, 3 meals a day for 7 days, 2 meals a day for 7 days, 3 meals a day for 6 days, 3 meals a day for 6 days and 2 meals a day on Sunday. The type of service represented in the first arrangement satisfies the school group, for ten months only; the others meet the requirements of the non-resident and tourist and employed groups. The proportion of non-resident employees will enter very largely into the determination of the number of patrons as long as the cafeteria is acceptable to them, suits their convenience, satisfies their hunger, stimulates their appetite, keeps up the standard of good food at a fair price.

The class of workers patronizing the restaurant will determine some interesting points. If this group is professionally established on a good salary basis they will undoubtedly purchase an entire meal. If the group is drawn from the smaller departmental stores and from minor clerks whose salaries range around the living wage figure, the latter will demand only a supplementary meal, a hot dish or a cold dish, soup or a beverage, or ice cream. The combination of these two groups will legislate toward a general cafeteria where every type of individual may be satisfactorily served.

The question of Sunday meals is in some localities a vital question. Theoretically it is quite a drawing card in some communities to have the privilege, which soon becomes a practice, of eating Sunday dinner

in a restaurant. It is well in this case to consider: the number of people in the community who are absolutely dependent for their sustenance on this restaurant; the number of out-of-town people who come in to church and are detained for afternoon meetings before renewing their homeward journey; the number of tourists who are in the community for sightseeing, when it is the town's business to provide nourishment with the scenery.

The town's point of view, whether "it is done" or "it is not done," will determine whether or not the establishment of a first class restaurant with good food at a reasonable price will entice people to stay downtown to eat, or prove of such service to them that it would be to their advantage to remain downtown for their noon meal. The distribution in the community of a small card bearing the following request for information to be signed by the recipient, is a preliminary step in determining the feeling of the community for such a service. The card may read:

Do you eat downtown at noon?	At night?
Would you patronize a cafeteria if one were established?	
If so, return this card to	
Name.....	
Business Address.....	

The number of signed cards returned will give a fair estimate of the possible number of patrons, and the information derived from the card will show the kind of groups that need and want this service. If the adult business group predominates the restaurant must be located in the business district. On the other hand, if the predominating group is composed of school children and teachers, the restaurant must naturally be located near the schools.

When the information from the card has been studied and digested, the group that has been interested in making the survey can proceed with the organization. A committee is appointed to be known as the Board of Managers, whose business it will be to do the constructive planning of the project. Their first duty will be to plan the scheme for financing the undertaking. They will consult the business men of the community in order to secure their coöperation and support before proceeding to make an investment. To finance the original project a stock company might be organized or shares might be issued at a moderate price and so put within the reach of the average young business man and woman. This method will operate to broaden the interest in the project and thereby strengthen the foundation of the enterprise

itself. The necessary amount may be secured by interesting one or more individuals in the project, who will be willing to advance the sum required to initiate the undertaking. The initial cost of the restaurant or cafeteria is not small, and the amount of reconstruction that has to be accomplished in rented quarters will make a variation in the sum to be secured. The amount that is raised must include enough capital to carry the cafeteria for a period of three months, or until the machinery and management are in working condition.

After the financing is assured, the next problem will be to find a suitable space. A room as nearly square as possible, in a location which is self-advertising, and with an easy entrance, should be chosen. It should be flooded with natural light to minimize the electric light bills, and should be adapted to unquestionable ventilation, for, after all, the first impression that is given the guest is the lasting one. The supply of fresh air may invite the guest to become a regular patron, and the lack of it will undoubtedly discourage any desire to return. The floor space to be rented must be of adequate area to include a dining room, rest room, kitchen, preparation room, and store rooms.

The space allowed for storage must be carefully handled, as the dry storage and canned goods require one kind of room and the root vegetables and other bulky natural foods require another. In both instances, ventilation and the necessity for protection by secure locking are vitally important and must be provided. The room for storage of vegetables is preferably in a basement. It should have a cement floor and should be provided with wooden slat bins made to hold varying amounts of supplies. The bins must be arranged to be filled from the top and emptied from the bottom to insure the oldest food being used first. The storage space for canned goods and general supplies should be provided with adequate shelving.

After obtaining desirable quarters, the committee should next call in an equipment firm or a consultant to plan the layout and equipment. The equipment should include one or two hotel ranges, a bake oven, two kitchen tables, one or two refrigerators, two sets of sinks, a coffee urn, an ice cream box, a steam table and as many labor saving devices for the preparation of vegetables and the grinding and mixing of food as the promise of business will warrant, the latter to be added as they have been earned by the business. In the dining room the list will include tables, chairs, a cold water dispenser, silver, china, glass, hat racks, and a cash register.

It is necessary to secure the manager before the plans of the restaurant are finally developed, and certainly before the equipment and furnishings are purchased and installed. The advice of a competent manager protects against many of the minor and major troubles that ordinarily occur. The management of the restaurant is the deciding factor in its efficiency, and it is absolutely dependent upon the knowledge and spirit of the executive. The manager must be chosen carefully after a personal interview. If possible, it is well to have a knowledge of the reputation and conditions obtaining in the establishment with which the candidate has already been identified, and the contribution he or she has made to its development.

If, after a restaurant has been established in the community, it has been found to be a non-paying concern, an investigation must be undertaken immediately to determine the reason. If business conditions in the town have changed, another survey may be necessary. It is not unusual that the original site is no longer the center of activities and must be changed. The following points will be investigated very carefully: Number of patrons served per day, per week, per month. How does this compare with the original numbers served? Amount of receipts per day, per month. Amount of expenditures per day, per month. How do these figures compare with previous business? Quality of food served. Attitude of the patrons toward the restaurant.

As a guide toward regulating the expenditures, the following percentages, based on the receipts, may be used: food, 45 to 60; wages and salaries, 25 to 18; rent, 3 to 5; upkeep, 10 to 7; renewals and replacements, 3 to 2; profit, 14 to 8.

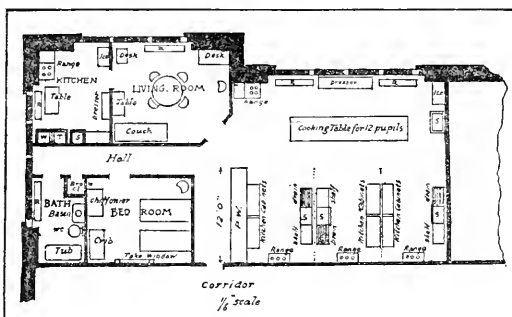
The fault of the management may lie in the amount spent for food or in the salaries paid. It is usually found in the former, and to correct this it is well to inspect the portions of food served and to look to the amount and kind of garbage that is discarded, investigating the manner of preparation of food in the kitchen and the tendency to pilfer on the part of the employee. The loss in sales from the food purchased may be traced to any or all of these conditions; each reflects the inadequacy of the management and should be treated on this basis. Mistakes are easily corrected or avoided where there is a complete understanding between the Board of Directors and the manager and where frankness and business methods have been the policy.

EQUIPMENT IN ELEMENTARY AND JUNIOR HIGH SCHOOLS

GRACE SCHERMERHORN

Director of Cooking, New York City Public Schools

The accompanying plan and the illustrations in the frontispiece show the standardized domestic science equipment for all elementary and junior high schools now being built in New York City. In a room the size of two ordinary class rooms, we have combined individual equipment, unit kitchens, and a flat. It is intended that two teachers will be in charge, and that 36 to 40 pupils will be taught at one time.



PLAN OF LABORATORY AND FLAT

The pupils will be divided into three sections; two of these sections in the laboratory kitchen, and the third section in the flat. These sections will work in the following manner:

Section 1. Individual equipment. Pupils learn to interpret and use printed recipe under supervision of the teacher.

Section 2. Unit kitchens. Each group of 2 pupils work independently at a kitchen cabinet, cooking in family quantity the food they learned to cook at the individual desk (section 1). Sections 1 and 2 alternate every lesson so that, while the teacher is developing work with section 1, section 2 is working without supervision to develop skill and to apply the knowledge of the previous lesson.

The food prepared in the unit kitchen will be judged in the light of the standard developed in the individual lessons, and the products that

have marketable value will be sold at cost to the school lunch room, to the teachers, or to the pupils to take home.

Section 3. Flat. Pupils learn household tasks other than cooking and care of the kitchen, and also prepare and serve in family meals the foods they learned to prepare in sections 1 and 2. Section 3 is subdivided into small groups, each doing a different task, each lesson. So far as possible printed directions are used in all 3 sections, demonstration and explanation being given when children cannot interpret the printed page.

The term is divided into thirds, and the sections rotate so that each section has two-thirds of the term in the cooking laboratory, and the remaining third in the flat.

In the cooking laboratory the unit kitchens are separated from each other and from the rest of the kitchen with iron railings, leaving the entire kitchen within sight of the teacher. In the flat the rooms are separated by beaver board partitions seven feet high, but the rooms are close together and the door openings are five feet wide, so that it is not difficult for the teacher to see what is going on.

The Housekeeping Center Association of New York City, with Mabel Hyde Kittredge as director, has done much to further the work in the flats. This association has helped buy furniture and trimmings that so far have not been furnished by the Board of Education. For many years the schools have used tenement flats maintained by this organization, so that when the request came for flats in the schools, as part of the domestic science equipment, principals and superintendents had already been converted to the value of the flat in conjunction with the cooking laboratory.

We know that this type of equipment has possibilities beyond the hollow square. We also know that every teacher in these new rooms will have to be on the *qui vive* every second. But we are all open minded in "trying out" in order that we may evolve the equipment that best meets our needs.

SCORE CARDS AS DEVICES IN TEACHING CLOTHING CONSTRUCTION

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Score cards have usually been employed as standards for judges in grading finished products. The writers have found that when worked out in detail they can be effectively used in teaching. They help pupils to estimate their own progress and success, and they aid the teacher in selecting subject matter and in determining those points which should receive the greatest emphasis in teaching.

The instructor may have in mind a progressive sequence of problems which must be mastered in a complex project, as the making of a cotton dress, but unless such problems are definitely pointed out, and their relationships clearly set forth, the students fail to grasp the true significance of the tasks which they are undertaking. In an effort to call attention to the large number and relative values of problems which should be borne in mind in garment construction, detailed score cards similar to the three presented in this paper have been found helpful. These score cards are of two types: first, that type which emphasizes but one phase of clothing construction; second, the type which includes the many phases common to a completed project.

Score cards I and II, which are being used in sewing classes with high school freshmen, are of the first type. Number I emphasizes proper technique in constructive work, while number II deals with the fitting of a garment.

With beginning students, the instructor finds it necessary to explain carefully the use of the scores, and to have the pupils use them first in a general class exercise for judging garments exhibited. After this introduction, each pupil is required to score the next garment she makes, handing in the detailed score with the finished project. The next assignment requires her to use the score in judging the work of another pupil. The construction score is used early in the semester's work; the fitting score later, usually with the last garments made, for not until then do the pupils develop sufficient judgment to use it profitably.

It has been found that the pupils welcome the scores as a tangible and definite tool for evaluating their own work. Their interest is most keen, however, when their opportunity comes to grade the work of their classmates. The scores thus obtained in the high school range high,

usually between 90 and 100 per cent, and never below 80 per cent. These high scores indicate the pupils' immature judgment, and are used as the basis for further class discussion.

I. Score Card for Garment Construction

FACTORS SCORED	PERFECT SCORE	SCORE OF GARMENT CONSIDERED
Seams.....	15	
1. wisdom of choice.....	8	
2. correctness of construction.....	7	
Hems.....	10	
1. appropriateness of width.....	2	
2. evenness of width.....	3	
3. disposition of fullness.....	5	
Edge finishes.....	10	
1. wisdom shown in choice.....	5	
2. correctness of application.....	5	
Fastenings.....	10	
1. appropriateness of type.....	3	
2. appropriateness of size.....	2	
3. correctness of position.....	3	
4. security.....	2	
Plackets.....	10	
1. appropriateness of choice.....	5	
2. correctness of construction.....	5	
Application of waistband or belt.....	7	
1. accuracy of belt finish.....	2	
2. distribution of gathers.....	5	
Application of trimming.....	10	
1. correctness of position.....	5	
2. security.....	5	
Hand Sewing.....	10	
1. evenness.....	3	
2. length of stitches.....	3	
3. tightness.....	1	
4. security of beginning and ending.....	3	
Machine stitching.....	8	
1. straightness.....	5	
2. length of stitch.....	2	
3. tension.....	1	
General neatness.....	10	
1. removal of bastings.....	2	
2. tying of threads.....	2	
3. creasing of folds.....	2	
4. accuracy of measurements.....	2	
5. care of raw edges.....	2	
Total per cent.....	100	

II. Score card for a perfectly fitting dress

FACTORS SCORED	PERFECT SCORE	SCORE OF GARMENT CONSIDERED
1. Waist.....	40	
a. Neck (10)		
1. Shape.....	3	
2. Size.....	3	
3. No excess fullness on chest at neck.....	4	
b. Armhole (15)		
1. Position.....	4	
2. Size.....	5	
3. Shape		
good lines down front and back.....	1	
top perpendicular to shoulder seam.....	3	
no excess fullness at back.....	1	
no excess fullness at front.....	1	
c. No wrinkles (10)		
1. From shoulder tip to chest.....	2	
2. Across front chest.....	2	
3. Across back chest.....	2	
4. From neck to underarm.....	2	
5. From underarm toward waist line, front.....	1	
6. From bust toward waist line, underarm.....	1	
d. Adjustment of fullness (5)		
1. Amount of blouse in back.....	1	
2. Amount of blouse in front.....	1	
3. Distribution of gathers at belt.....	3	
2. Sleeve.....	20	
a. Warp yarns perpendicular to floor.....	5	
b. No wrinkles.....	5	
c. Amount and distribution of fullness consistent with comfort and style.....	5	
d. Looseness sufficient for free movement of arm.....	5	
3. Skirt.....	30	
a. Center front warp yarns perpendicular to floor.....	3	
b. Weft yarns parallel to floor.....	3	
c. Seams at right angles to waistline and hem.....	3	
d. Fullness appropriately distributed		
across front.....	3	
across back.....	3	
over the hips.....	3	
e. Straight hanging of back and front.....	3	
f. Bottom parallel to floor.....	5	
g. Pleats or gathers to belt at waistline.....	4	
4. Accessories.....	10	
a. Collar-position.....	3	
no wrinkles.....	2	
b. Cuffs-position.....	2	
no wrinkles.....	1	
c. Belt or sash correctly placed.....	2	
Total per cent.....	100	

III. Score card for garment construction

	POSSIBLE GRADING					SCORE OF GARMENT CONSIDERED
	20%	40%	60%	80%	100%	
I. Judgment of practical values (20)						
A. Choice of materials:						
1. Ease of handling.....	0.4	0.8	1.2	1.6	2.0	
2. Suitability to purpose...	0.8	1.6	2.4	3.2	4.0	
3. Durability.....	0.8	1.6	2.4	3.2	4.0	
4. Laundering or ease of cleaning.....	0.6	1.2	1.8	2.4	3.0	
B. Cost of materials and findings	1.0	2.0	3.0	4.0	5.0	
C. Amount of waste in cutting garment.....	0.4	0.8	1.2	1.6	2.0	
II. Design of garment (27)						
A. General appearance:						
1. Line.....	0.4	0.8	1.2	1.6	2.0	
2. Distribution of light and dark.....	0.4	0.8	1.2	1.6	2.0	
3. Color.....	0.4	0.8	1.2	1.6	2.0	
4. Texture.....	0.4	0.8	1.2	1.6	2.0	
5. Suitability of trimmings and finishings.....	0.4	0.8	1.2	1.6	2.0	
B. Suitability to individual:						
1. Appropriateness of line and space relation....	1.2	2.4	3.6	4.8	6.0	
2. Color and design of ma- terial.....	1.2	2.4	3.6	4.8	6.0	
C. Suitability of pattern chosen to texture and pattern of cloth.....	1.0	2.0	3.0	4.0	5.0	
III. Technique and judgment (53)						
A. Fit of garment.....	3.0	6.0	9.0	12.0	15.0	
B. General constructions:						
1. Stitching (4) (Williams & Knapp scale) ¹						
Spacing.....	0.2	0.4	0.6	0.8	1.0	
Neatness.....	0.2	0.4	0.6	0.8	1.0	
Tension.....	0.2	0.4	0.6	0.8	1.0	
Length of stitch.....	0.2	0.4	0.6	0.8	1.0	
2. Seams (4)						
Suitability to material and part of garment.	0.4	0.8	1.2	1.6	2.0	
Care in construction....	0.4	0.8	1.2	1.6	2.0	
3. Hems (4)						
Appropriateness of width.....	0.4	0.8	1.2	1.6	2.0	
Care in turning.....	0.4	0.8	1.2	1.6	2.0	

¹ Home Economics in American Schools. Supplementary Educational Monograph. The University of Chicago, Chicago, Illinois.

III. Score Card for Garment Construction—Continued

	POSSIBLE GRADING					SCORE OF GARMENT CONSIDERED
	20%	40%	60%	80%	100%	
4. Joining of waist and skirt.	0.8	1.6	2.4	3.2	4.0	
5. Setting of sleeve.....	1.4	2.8	4.2	5.6	7.0	
6. Finish of pocket, sash, collar, cuffs, placket...	0.8	1.6	2.4	3.2	4.0	
7. Fastenings: buttons, but- tonholes, hooks and eyes, snaps.....	0.8	1.6	2.4	3.2	4.0	
8. Joining of trimmings: lace, piping, embroid- ery, binding.....	0.6	1.2	1.8	2.4	3.0	
9. Hand work.....	0.4	0.8	1.2	1.6	2.0	
10. Decorative touches or elements.....	0.4	0.8	1.2	1.6	2.0	
Total percent.....					100	

The series of numbers to the right of each subdivision suggests grades for each point to be scored, ranging from 20 to 100 per cent. To illustrate, a grade of 4 for "Suitability to Purpose" represents a perfect score for that factor, while a grade of 2.4 represents a 60 per cent score, and 0.8 a 20 per cent score.

The need for the second and more complex type of score card is particularly felt when instructing students of college age. Garment construction to the average pupil means stitches and seams; the artistic elements which enter into the proper relation of lines as indicated by the seams, and the proper distribution of light and dark are given but little thought. She seldom realizes the importance of choosing materials and trimmings which in texture, color, and design are perfectly adapted to the pattern chosen for making the garment. Score cards of the second type aid materially in calling to the attention of the student such related factors in garment construction. Score III is of this type. It not only refers to technique in construction, and to the fit of a garment, but also emphasizes selection of material and choice of design. At first sight this score card seems rather complex, but in actual use it is very simple.

The score card is organized under three main headings. An attempt is made in the first division to establish values for judging the student's ability in economizing materials when cutting garments and in choosing appropriate materials and findings with reference to their functions and cost. The second division deals primarily with art principles in the design of garments, while the third division is given to the criticism of technique and of judgment shown in the choice of processes. The

element of judgment enters into constructive work so largely that it has been found advisable to combine the two. To illustrate, a seam may be perfectly constructed but not be adapted to the kind of material nor to the part of the garment in which it is used; the length of stitch and the tension suited to sheer materials would not be appropriate to heavy cloth.

Before any constructive work is attempted in the college class, two ready-made dresses of different types are borrowed from one of the local stores. The score cards (No. III) are distributed and, after their use is explained, the different points under each division are discussed in relation to the ready-made garments. The students then score the garments. No claim is made for accuracy of judgment in scoring at this time; the purpose is simply to center the students' attention on those factors which should be considered in the constructive work.

The score is used again in judging the garments constructed in class. Each girl is required to score every garment except her own. The aim of this procedure is to force each student to analyze garments critically, from the viewpoint of construction, design, and value as related to cost, thus giving her a definite basis for future constructive work, and for the selection of ready-made garments. To the instructor, the use of the score card serves as a means of determining the judgment which has been developed by the student.

In a course just completed, twenty-two college girls scored twenty-one dresses in two double periods. Without exception the students were agreed that such use of the score card was valuable in helping them to establish mental standards for judging garments. Their chief criticism of the procedure was that the time was too limited for giving adequate thought to all the factors scored in so many garments. It is the opinion of the instructor that the scoring of ten selected garments would be sufficient to develop the same critical attitude in the student, and at the same time give her a basis for estimating her own ability and the workmanship of others. It might be interesting to note here that the averages of the students' scores coincided with the judgment of the instructor in pointing out the three highest and the four lowest scores.

In conclusion, analytical score cards when properly used in teaching garment construction aid materially in giving students a proper conception of the problems involved in a project as a whole, they point out the relative values of the various problems involved, they help to develop in the student a critical and analytical attitude which is valuable in selecting ready-made garments, and they assist the instructor in determining the judgment which students have developed in their work.

DYESTUFFS

GLENOLA BEHLING ROSE

Dyestuffs Department, E. I. du Pont de Nemours and Company, Inc.

Hardly a day has passed, during the last six years, on which a newspaper has been published without at least a small paragraph concerning dyes, American dyes, German dyes, the fastness of dyestuffs, tariff, embargoes, license; and yet some persons still ask why we call our colors "Coal Tar Dyestuffs." They still marvel at the fact that black tar can be turned into indigo blue or cochineal red.

Tar is one of the fractions obtained when coal is destructively distilled. This tar, on being redistilled and the fractions taken at smaller intervals, yields a number of products among which are those that the dyestuff manufacturer calls "crudes," such as benzene, toluene, naphthalene. From these crudes, by treatment first with acids and then with alkalies or other reagents, when heated or cooled, are prepared the "intermediates," which number for commercial use about fifty or sixty. The difference between an intermediate and a crude, generally speaking, is that a dyestuff can be made from an intermediate by a single process of coupling with some other intermediate, while this is not true of the crudes. The crudes are all colorless or white substances with characteristic odors, while the intermediates, may or may not have odors and are usually white or yellow.

Dyestuffs are all colored, but are odorless. They are sold either as powders or crystals or in paste form. While hundreds of dyestuffs are known, those that have been found most satisfactory for commercial use number less than five hundred of distinct chemical composition, excluding mixtures of two or more to give a separate brand.

Upon the skill of the dyer depends the choice of these colors, and upon his choice rests America's reputation for ability to make fast colors. If he makes a mistake and chooses a violet that does not penetrate so readily as the green he puts with it to make the blue on a felt hat, the violet will be on the surface and the green inside the felt. If he chooses a red that is faster than the orange he puts with it to make a vivid scarlet, the material will soon lose its life and the wearer will have a very dull and not a flaming cloak. If he chooses for gingham a violet that turns permanently red when heated, that gingham dress will disappoint its owner after the first washing and ironing, regardless of its extreme fastness to washing and light. If the paper dyer chooses for wall paper

a color that will not stand alkali, the alkali in the plaster will soon destroy the shade. It is not necessary that any such cases should occur in America today. Enough dyestuffs in variety, in quantity, and in quality, are made to supply every need.

But to those of us who watch the trend of the consumers' demands, it is interesting to note the changed attitude of the public. Before the war they expected garments to fade; now they insist that they must not fade. From tables compiled by the Government it is possible to compare the quantities of certain dyestuffs used in this country before the war, with the quantities of the identical dyestuff used today. Some of the big sellers of those days cannot be moved today, and it is necessary to increase the production of the faster, although more expensive, colors. Every mill in the country insists on faster colors, because their selling agents demand them, because their consumers in turn demand them.

Fastness is relative, however. A dye that is fast for one purpose may not be fast enough for another. The brilliant shades on silks for evening gowns are chosen especially for brilliant clarity, not for fastness to light. The colors very fast to light and washing, used on chambrays, are far too dull for the ballroom. In each case the finished product determines the choice of the dyestuff used to produce the shade.

Dyestuffs manufactured by American factories are identical with German dyes; in fact, German dyes were obtained to be used as standards. Every dyestuff before being put on the market is tested for all properties against a standard. Our dyestuffs are made from the same intermediates, and are equal to the German dyestuffs in fastness to light, water, washing, acids, alkalies, rubbing, ironing, bleach, burning sulfur fumes, street dirt, perspiration, and other properties. In addition, new dyes are now being invented in America.

We are frequently asked what should be used by the housewife to make colors fast. Our only reply can be, "nothing." Goods properly dyed should require no treatment, and the majority of remedies published in various magazines and papers are as useless as they are harmless.

FATS AND THEIR USE IN PASTRY MAKING

MARY CARTER TATUM

Abstract. The aim of this study was to work out methods and proportions for the use of fats in pastry making that would be economical both in time and materials. The study consists of two parts, the first part being a brief study of the fats, and the second part a record of the experimental work.

The results led to the following conclusions:

1. Good plain pastry may be made from the common fats in proportions ranging from one part butter and four parts flour to one part oil and seven parts flour by weight.

2. Fat and water do not have to be ice cold when making plain pastry.

3. Much handling makes tough pastry.

4. Butter, oleomargarine, and certain vegetable fat preparations make excellent puff paste, and the best proportion is one part fat to one part flour by weight, or one part fat to two parts flour by measure.

5. The following methods serve in a measure to prevent fruit juices from soaking into the lower crust of fruit pies:

a. One half to one tablespoon of flour cooked into fruit juice before pie is made.

b. Flour sprinkled over lower crust.

c. Cooking in granite pan on lower rack of oven at 300°C. for seven minutes.

d. Brushing lower crust with egg white.

The test used as a measure of the extent to which absorption had taken place was the extent to which the lower crust increased in weight as a result of the baking process.

SUGGESTIONS FOR RESEARCH IN MARKETING OR DIETETICS¹

There are many lines of research in Home Economics which I should like to see pursued. My own work has been largely on minimum cost of adequate living. Much more needs to be done in that line, and I believe that college students could do a great deal of it.

These are some of the minor projects which it has seemed to me possible to work out in classes of dietetics or household management:

In what quantities is it most economical to buy food materials for household use?

What is the difference in price of the same food material after different forms of preparation; for example, corn in the form of corn meal, corn-flakes, hominy, grits, etc?

How much more in comparison to quantity of food consumed does it cost to feed a family of two than a family of six, seven, or eight?

What is the size of prunes most economical to buy?

What is the cost of homemade bread, including cost of labor and fuel, and excluding these factors?

What is the necessary waste in food materials in the process of preparation and serving?

¹ Extract from a letter from Florence Nesbitt, District Superintendent and Home Economist, United Charities of Chicago, Lower North District.

STUDENT CONTRIBUTIONS

MY SUMMER'S EXPERIENCE IN INSTITUTIONAL WORK

Note: This article is the story of one student's experience in institutional work. Perhaps it will serve to give girls who have a keen interest in the institutional phase of home economics, and are ambitious to do it, an incentive to attempt experimental summer work. The experience derived will be extremely beneficial to them in their continued study and they will be better able to do their class work with understanding.

Every summer a private club in northern Iowa, whose membership is over 100, has employed a manager trained in home economics. It is customary for the manager or joint managers to contract for this project. Instead of receiving a salary they make what they can on the business. This means that they have full charge; they hire all the help, buy all the food and supplies, but do not pay anything for rent or light. The contract is explicit and includes such details as: the hours of the meals; length of serving hours; foods to be served at each meal, for example, for breakfast fresh fruit, a choice of any drink, a choice of any cereal (one to be hot), cream for cereal, a choice of bacon, eggs or hot cakes; persons to whom meal tickets are to be issued and provisions that any luncheons or dinners which the guests might give are to be taken care of.

A graduate of Iowa State College and I accepted the management of this private club for the summer. We began making our plans two months previous to the opening. One hired the kitchen help and the other located college women to do the serving. We made out a list of food supplies which we estimated would be needed for the first month of the season, and placed our orders with two wholesale houses, one of which was near and could serve us in emergency. We also bought as much as was feasible from the local grocer.

En route to the resort we stopped in the small city ten miles distant and made ourselves known to the wholesalers. The same day we visited the packing house to become acquainted not only with the firm but with the phraseology of their price lists in order that we might do more intelligent buying. We visited the dairy where we expected to buy supplies and made arrangements for the cream and milk to be delivered every morning and a certain number of pounds of butter each week. The wholesale grocers later sent salesmen several times a week to take the orders so that it was unnecessary for us to go to town.

After we opened, we were fairly besieged with visiting salesmen. Each told us that the former managers had used his goods. They used any means of persuasion. For the most part we abided by our first decisions for we had given them very careful thought. It is part of the ethics of buying for the purchaser to be as loyal to the firm as the firm is to him. We found in times of emergency that these firms gave us fine service.

We checked all shipments as they arrived. Our kitchen help was colored. A man as first cook prepared meats and vegetables, while his wife as second cook did the pastry work and also assisted in the preparation of the vegetables and salads. We had another man who was the dishwasher and did the cleaning. A sister of the first cook was second dish washer and helped prepare salads. As these people were related they were more contented and did better work than strangers would have done.

In the dining room there were eight girls, one for every two tables of eight each. It was a family dining room and every one came in at once expecting to be served without delay. The girls were given definite duties before and after every meal. They came over from their cottage to do their work about thirty minutes before the meal was to be served. Their duties were cutting butter patties, cutting bread, filling individual cream pitchers, syrup pitchers, etc. Each was responsible for the things on her own table. The serving usually lasted one hour except at breakfast when two hours were allowed. A choice of food was given at breakfast but none at the other meals. The method of serving for all the meals was practically the same. Each girl had her own movable tray-stand in a convenient place by her two tables. There was also another little stand built in the side wall where she kept the water bottle and the ice tea pitcher. She followed a definite route through the kitchen in obtaining the food for her tray. After the meal was over, the dishes were taken off and tables crummed before the girls ate. While the girls ate at a table in the dining room arranged for their own use the dishes were being done. By the time they had finished, the china and silver were ready for them to reset the tables. Everything in the dining room was left in order for the next meal before any one was allowed to leave. In addition to their living we paid our girls only a small amount which was to cover their railroad expenses. They were given every opportunity they desired to learn about the methods of the business and of the management. Even figures and amounts were given if they cared to see them.

Since the salesmen from various firms came on regular days we made out our menus for ten days in advance for easy reference. We formed lists of articles wanted on certain dates which facilitated prompt shipment or delivery. Later in the season we depended entirely on truck gardeners for fresh vegetables as the wholesale house did not handle them then. We paid for these things when they were delivered; other bills were paid by our secretary on the dates arranged for. We had planned our own system of bookkeeping. We paid all bills by check, filing the bills with the same number as that of the check.

Some of the difficulties which had to be met were: becoming accustomed to the food tastes of the people; supplying the constant demand for fresh fruits and fresh vegetables and using absolutely no canned goods; keeping the food hot with inadequate equipment to arrive at the time they were required; meeting the situation when supplies failed; settling troubles which would arise among the kitchen help; serving meals on time regardless of anything that happened.

The value of the experience, however, consisted in this: first, we carried real responsibility; second, we had many a lesson in the psychology of business; third, we proved that we could meet emergencies; fourth, we had wonderful training in managing people, temperamental cooks, idle and often unreasonable patrons, irresponsible and thoughtless helpers. But on the other hand, many people were interested in our undertaking this work and encouraged us with their commendations and helped us to succeed. The whole experience has given us an appreciation of all that is involved in the task of feeding the public and has increased our desire to continue in this phase of home economics.

JEANETTE ROGERS,
Iowa State College.

THE BUDGET¹

Keeping budget in the house bring happiness, because the money is living question, and always bring worry. Keeping budget it will help very much. Budget has been called family compass and it is very

¹ This article, written by a young Serbian girl, who is being educated at the College by the Newcomb students, is printed without change.

profed. Budget has to be fixed in way how much income per year. Regularly budget run in 100 per cent but its arrangement depends how many family have to live in that income, and how much the income is. For example, we can take \$180 per month because the poor people have to think, more than the rich, how to arrange their income. This budget will show how to spend whole amounts for food, clothes, running expenses, shelter and higher life; but if we want to keep accounts, for money, how much we spend every day, we have to write in a separate book for everything that we buy. Clothes 20 per cent, food 35 per cent, shelter 15 per cent, running expenses 20 per cent, higher life 10 per cent.

HOUSEHOLD MANAGEMENT

In our class we have been introduced first with the question, "Purpose of a home." It is a very long subject to discuss about and that is something that make a home. Knowledge about household management give us good health, education, learn the family, help to the everybody, cleaning the house, feeding the family, keep accounts of money.

First is one which help us to do all the others. For the health, we learn in cooking which food will give great deal of health. The second, education, it is for future life; it is to teach who don't know about and for ourself. The third is one that is very hard, to know own family. Understanding each other in home and to be able to do for them is the best feeling and make very happy home. Fourth, help to everybody, it means very much to the person which like to know and has not. Fifth, cleaning the house means very much, because if we do not know how to clean all things, many times we have to buy two times for one. Keeping house clean means give longer life to the family. Sixth, feeding the family, it helps very much to the sick people. Feeding the family is very important for the children to keep them in good health and give strong foundation. Seventh, keeping account of money brings happiness to the home. If we know how much we have and how much we need to work to have enough for life it will be enough to make us happy.

LEPOSAVA STANKOVITCH.

H. Sophie Newcomb College.

THE VITAMINE'S THE THING

The Vitamine's a bashful thing,
We've never seen his face,
But they say he's vital to the health
Of the whole human race.

The scientists discovered him
Just a short while ago,
And ever since they've found him out
Wherever he could go.

They analyzed a cabbage plant,
They found the vitamine,
And now they say he's to be found
In everything that's green.

They looked in butter, milk, and cheese,
The vitamine was there;
And so they say, "Drink lots of milk,
If your health needs repair."

As if all this were not enough
They still gave him no peace
They went and tracked him to his lair
In—would you think it? Yeast!

So now, you know, it's quite the thing
To count your vitamins.
They're even more important still
Than calories, it seems.

Poor, shy, retiring vitamine
So in the public eye!
They've found every retreat, to which
The bashful thing could fly.

ELIZABETH CORNELIUS,
Class 9a, Public Schools,
Baltimore, Maryland

EDITORIAL

THE CALL TO CORVALLIS

Most of us believe that the next five years will prove the most significant period in the growth and development of home economics. The test made of us during the war was severe and telling but it opened the door to a larger opportunity. The present period of economic and industrial readjustment is challenging us more seriously than the war, and it will take the collective wisdom, training, and faith of all of us to meet it.

You need to go to Corvallis for your own sake, because you need the contacts with your own profession. You need to understand and believe in and help create the new viewpoint, and to reinterpret the meaning and function of home economics.

The American Home Economics Association needs every one of the thirty thousand women who are directing some kind of home economics work, needs you for the contribution you can make to your profession; needs your help in developing policies and a constructive, forward-looking program of work; needs you because you are an organic part of our big professional group.

Every indication points to one of the most stimulating, worth while meetings the Association has ever held. With the "Home Economics Special" train, providing a two-day stop-over in Glacier National Park; with a general and section program vying with all others in the past for distinguished men and women participating; with the cordial hospitality of Oregon awaiting you, how can you as a home economics woman afford to miss it?

MARY E. SWEENEY.

Home Economics Journalism. It would seem that we, as home economics women, are waking up to the possibilities of our own particular kind of journalism. We are realizing that we should take note of the importance of this kind of work in the training of our students, for, until fairly recently we have not recognized a golden opportunity. It is unfair to the women of this country that so much unauthentic copy has appeared in the women's magazines and daily press, written in a popular style by persons unfitted for the work of presenting home economics material but with the ability to write copy which they can put across. One inaccurate recipe for a cake may cause the waste of quantities of material. This is only one small example to illustrate the point. We could give hundreds of others.

When we write an article for the household department of a woman's magazine we have a great audience, great not only in numbers but great in possibilities, because if we have done our part we have given our readers that which will be of real use to them in the business of better living.

So we can say home economics journalism may be a service. It is only one form of teaching. We like to think of it as one phase of extension work.

Our problem is that of the average woman. Do we meet her half way? The editors say that many times we do not meet her on her own ground. It is for this reason that they accept so much material that lacks the real meat which we could give, but presented, as they think, from a more sympathetic or popular point of view. We grant that we need training as to the best way of presenting our material but the editors should have a greater knowledge of the content of our work. Recipes have their place in the women's magazines, but home economics has a greater contribution to make than page after page of this kind of material. There are plenty of good cook books.

Where are we going to get that ability to write good "copy?" Some of us have achieved it to a greater or lesser degree by experience but cannot we simplify the matter by making a point of training our girls along the lines of publicity while they are taking their home economics work. Courses in English are not enough. Cannot schools of Journalism and Home Economics Departments coöperate?

In present day terminology the magazines are great broadcasting stations through which we can send to all parts of the world material that people need. Here is an opportunity for us. The work is a big one. It takes all sorts of perseverance and an almost uncanny intuition and knowledge of, not only what women want, but what they need, if we are to write good household material. The unseenness of the audience is another difficulty. Those who write miss the inspiration which comes from meeting one's audience face to face.

We must not let our girls who are planning to be home economics journalists think that a course in home economics and a collection of note books and text books, collected while in school, will give them an abundance of material about which to write. A girl may think that she is fitted to write for the household department of a woman's magazine. She has heard the pay is good, and it is, and the prospect is otherwise attractive, so she immediately attempts, after finishing her academic work, to write articles and have them accepted, and she wonders why they are returned with a polite thank you and a statement saying that the material is not fitted for the special needs of this particular magazine. It is a fact that no home economics person should sit at a desk and simply write. What the magazine readers need was well expressed by one editor when she said, "Our readers want the very things these women

know but they do not want class room theory, they want theory filtered through practical experience;" and so we would say, "Do your writing as a side-line and as the logical result of some real active work you are doing." It should then be live, practical, and appealing. Then and then only can we claim the field giving the women that for which there is a crying need,—good substantial material which has all the dignity and power of well-presented material in the class room but adapted to the lives of the women for whom we are writing.

We have said that, as home economics women, we are waking up to the possibilities of our own particular kind of journalism. For the last two years this subject has had its place on the program of the American Home Economics Association. This year it will also be discussed. The April meeting of the Home Economics Association of Greater New York was devoted entirely to this subject. There were present representatives from many of the leading women's magazines and newspapers. Martha Van Rensselaer of the Home Economics Department of Cornell University and Editor of the *Homemaking* Department of the *Delineator*, began the discussion. She said in part:

For a long time we were busy determining what the home economics field was. We were busy, first, with teaching, we became busy with public speaking, and then filling people's minds with home economics subject matter. A medium has pressed itself upon our attention from the time bulletins were written, which we have not dignified before by the name of home economics journalism, but writing has been a medium of giving to the people the contents of the subject matter in home economics. We have underestimated its value. The research work has kept people's minds intent upon laboratory processes. Teaching has given a frame of mind to a person, which made it difficult to change the method of presentation. Those who have taken up home economics professionally, so far without exception, must have a desire to pass it on to some one else. Even the research worker must do that; the teacher does it; the public speaker does it. I have been much interested in hearing a few comments upon the value of writing in reference to home economics or in reference to any subject which we think is good for the people. A gentleman who has done some very wonderful work in child welfare said that he had come to a point, now, where he wanted to make known what he had found. He went to educational organizations to speak, but he believed that he would spend a large amount of time in travelling without reaching more than a few in comparison with the number which he might reach if he wrote for a magazine which had a large circulation. He was willing to place his important material in a magazine which would be far-reaching in its circulation.

GENOISE BROWN SHORT,
Editor Housewives' Forum, Pictorial Review.

Mary Henley Peacock, senior instructor in the Department of Foods and Cookery, Teachers College, died April 7, 1922.

Miss Peacock made to the Department of Foods and Cookery a lasting contribution in organizing a number of the fundamental courses, and in training some of the most successful members of the staff.

Miss Peacock was graduated from Earlham College in 1898 and from Drexel Institute in 1901. Before coming to Teachers College she was instructor in dietetics in the Training School for Nurses at Johns Hopkins Hospital. Miss Peacock became a member of the staff of the department at the opening of the School of Practical Arts in the fall of 1909.

OPEN FORUM

Note: The following contributions have been sent to the Journal in connection with the article, Standardization of the Practice Field, by Katharine Fisher, published in the Open Forum, March, 1922.

The Drexel Institute. We give the students four different problems, cafeteria, tea room, dormitory, and hospital. In each case they are under the supervision of a member of our faculty. In the first three cases, they plan the menus, plan the work for themselves and servants, prepare the food, and figure costs. In the hospitals, the students stay for five days, and are given an opportunity to observe the work of the various departments and to take over certain duties under the direct supervision of the hospital dietitian who, in turn, renders a report on each student's work to the professor. We feel that our great lack is that the students are not given the opportunity to do the actual buying, and we hope to include that in the work in the near future.

GRACE GODFREY,
Professor of Domestic Science.

University of Nebraska. At present the only practice field under the supervision of the institutional management division is our Woman's Commons, a dining room in one of the cottage dormitories, where we serve about fifty girls. I do not believe this is large enough to give the students much idea of institutional work.

The practical work given this year has included work in the kitchen, salad room, dining room, and office of the Commons. The Students have been given the entire responsibility of the dining room for a day. In addition to this, the students have worked in a local tea room, in the high school and Y. W. C. A. cafeterias, and have observed in one of the hospitals. It has been impossible to give much supervision when the students were working in places in town. The reaction of the girls is that they have been given too much routine work, and have not been allowed to take the responsibility for any one big piece of work. They feel that they have been hampered because of the short period (two hours once a week), but they have learned to see things from the employee's stand point, and they realize that the manager must know how to do all the work she requires of her employees.

We have a wonderful opportunity to give students excellent practical training, for there are two large cafeterias, one on each campus, besides the Commons, which can be run with profit, either as a dining room or as a campus tea room. We hope, in the future, to have all of these under one trained director, who will supervise and have entire charge of the buying.

I believe that students need a course in the practical routine work of the kitchen, bake shop, salad room, and dining room, before they are ready for any theory. They must have something as a background, or they cannot be expected to get a great deal of real benefit from purely theoretical work. A second course is also necessary, after completing the other courses, in which the student is given the responsibility for the actual running of the place, in order that she may acquire confidence in herself, and at the same time, give the supervisor an opportunity to "size up" her ability as a manager.

In this, the college must recognize the necessity for adequate time to be given to practical work, and must cooperate, in arranging other courses, so that students may spend longer periods of time with no other classes to interfere. Otherwise, it is impossible for them to see any institutional work as a whole. I shall be most interested in seeing what other universities contribute on the question of practice fields, for I feel that it is a very vital thing, and one which must be developed and more thoroughly organized, if our students are to qualify as trained women.

FRANCES DUNNING,
Head Institutional Management.

Lewis Institute. We offer three established courses in institutional management which are not ideal, but do give the students some valuable experience. We realize that the mere planning of menus and recipes and the ordering of supplies is only a fraction of the duties of an institutional manager. She needs to know how to perform the greater part of the activities which take place in the average institution for two reasons: first, to have an appreciation of the time, energy, and skill involved in their performance; second, to have sufficient knowledge of these duties to instruct intelligently her future employees, should the necessity arise. The future manager needs to come in contact with the problems of the management of employees, co-workers, and patrons and guests of the institution, to know something of their inter-relationships as units of the whole.

The Lewis Institute is fortunate in its facilities for practice work, as we can take advantage of the fact that day school closes at three o'clock and evening school begins at four o'clock. The equipment is also a great help. We have a fair-sized lunchroom, with a smaller dining room adjoining, and desirable kitchens located on the fifth floor. A small bakery and a laundry on the sixth floor, a small women's dormitory in the Institute block, and a cafeteria and kitchens on the second floor. The laundry, bake-shop, and dormitory have been used as successful practice fields. The cafeteria is used at present for institutional practice, but not for formal instruction.

The first course in institutional management is handled as follows: The number in the class varies from ten to fourteen. The fifth floor kitchens and dining rooms are used as a laboratory, and table d'hôte lunches are served four days per week to from sixty to one hundred persons each day. The length of the term is twelve weeks. The fifth day each week is devoted to lectures, discussions, and field trips. The method of operating the lunchroom daily with a few minutes daily for discussion has been tried, but we returned to the first plan. The laboratory period is two hours and a half in length. With few exceptions the foods are prepared and served in the laboratory period. Pressure cookers, a power mixing machine, dish-washer, and power ice-crusher and freezer are the main labor saving devices. The utensils used in the preparation of the meal are washed by the students, but the dishes are washed by a paid worker. The distribution of a class of fourteen to serve one hundred is as follows: manager, assistant manager, head waitress, four waitresses, three pantry girls, two pastry cooks, and two

meat and vegetable cooks. Each office is held for two days at a time. Thus each office is held at least twice during the term.

The tea room routine is somewhat different. The class hour is from three to five; the serving period is from three fifteen to four fifteen. While most of the day-school patrons indulge in dainties, the menu offers enough variation so that the evening school students who come to four o'clock classes, can select a substantial lunch. All ices and ice creams are made, frozen, and packed by student service earlier in the day. The dishes are washed in the machine by members of the class. The class consists of a manager, cashier and checker, head waitress, waitresses, cook, baker, and assistant.

Each class supplements its course with field trips; and plans the floor plan, equipment, decorative scheme, etc., for some type of institution as a term paper.

A longer period, say one half day, would be more satisfactory, but the classes develop skill and speed.

GRACE GORDON HOOD,
Professor of Home Economics.

Calories from Eskimo Pie and Ice Cream Sandwich. A high school class in dietetics in the Minneapolis Public Schools determined the calories in Eskimo Pie and Ice Cream Sandwich both of which cost 10 cents in the school lunch room.

The chocolate was removed from the Eskimo Pie and weighed, and the energy content calculated. The ice cream was weighed and the calories calculated (Rose). Total calories, 158.

The "Nabisco" and its sugar coating were removed from the Ice Cream Sandwich and weighed and the calories determined separately. The ice cream was weighed and the calories calculated. Total calories, 199.

Butterfat in the ice cream of both the Pie and the Sandwich was determined by the Babcock method. The fat content in both was identical.

JESSIE CAPLIN,
West High School, Minneapolis.

BOOKS AND LITERATURE

The Vitamins. By H. C. SHERMAN AND S. L. SMITH. New York: The Chemical Catalog Co., 1922, pp. 273. \$4.00.

This is one of the series of scientific and technologic monographs now being issued by the American Chemical Society. This new endeavor of the society has for its avowed purposes two rather distinct aims. "The first purpose . . . is to present the knowledge available upon the chosen topic in a readable form, intelligible to those (chemists) whose activities may be along a wholly different line . . .

The second purpose is to promote research in the branch of science covered by the monograph, by furnishing a well digested survey of the progress already made in that field and by pointing out directions in which investigation needs to be extended." The monograph by Sherman and Smith is so excellent an example of practical fulfillment of both these purposes, that one can only congratulate the editors upon the fact that this contribution has appeared early enough in the series to set an enviable standard for later numbers.

The book consists of a preface, five chapters, a bibliography, and index. The first chapter contains a brief but excellently balanced description of the early history of vitamin investigations. There is less that is unique in this part perhaps than in the three succeeding chapters.

The second chapter, entitled conservatively the antineuritic vitamin (and, or) vitamin B, contains detailed reports of experimental methods. Here are given a complete and satisfactory summary of the attempts of Funk, Williams, Seidell, and others at chemical isolation and synthesis of the antineuritic substance; full discussion of the evidence upon the question of the identity of this substance with the vitamin B of McCollum, Osborne and Mendel, Drummond, and others who observed growth stimulation in young animals rather than the cure of polyneuritis; a summary of such physiological findings upon the rôle of this substance as have

been reported by McCarrison, Karr, and others, and upon the yeast growth method of measuring the vitamin B content of watery extracts of foods; a list of investigations upon the occurrence of this substance in nature, with brief discussion of the findings for each class of foods; and finally a summary of the properties and occurrence of vitamin B.

The third chapter deals in somewhat similar detail with the antiscorbutic vitamin—vitamin C. The characteristics of experimental scurvy and the distribution of the antiscorbutic substance in foods is given the major amount of attention, very little emphasis being placed upon the clinical phase of the problem. An excellent discussion of the evidence as to the practical bearing of cooking and preserving processes upon the vitamin C content of foods is a feature of unusual value to teachers of nutrition and food preparation.

The fourth chapter is entitled the fat-soluble vitamin—vitamin A. The much discussed question of the stability of this substance is carefully reviewed, as is also its possible relation to the lipochromes. There are given, as for the other two vitamins, a full statement as to occurrence and estimation in animal and vegetable tissues and products, a valuable list of references to all reported occurrences of this vitamin in food materials, and a rational discussion of its relation to ophthalmias, reproduction, dentition, and rickets. The treatment of the last named subject, rickets, is exceedingly brief in comparison with that accorded other topics, and in view of the importance of the problem and the amount of active investigation going on at present.

The last chapter entitled "vitamins in the problem of the food supply" will probably prove to be of the greatest interest of all to dietitians, teachers of nutrition, physicians, and others concerned with the application of laboratory findings to practical feeding problems. It seems to the writer of this review, however, an unnecessary addition from the point of view of the guiding purpose of the monograph. Those who are

interested in advancing investigation upon vitamin occurrence and function will have no particular use for this well balanced discussion, and those who can profit most from this chapter will make little use of the preceding careful presentation of the evidence.

The familiar table of distribution of vitamins in investigated food materials first published in Report No. 38 of the British Medical Research Committee and modified by M. S. Rose, is reprinted in the last chapter. One feels some regret that an attempt at a quantitative summary had not been made instead. It is probably not too soon to look for a compilation of more detailed and definite character which should contain information as to method of preparation or preservation of the food tested, type of experiment used, approximate figures in grams per day required for normal growth or prevention of characteristic disease, and full reference to the literature. The present table is, however, of value for the practical purpose for which the last chapter of this book was written.

The bibliography of 25 pages containing some 900 to 1000 separate references is perhaps the most complete and most nearly correct collection of references to the literature on vitamins which has so far been compiled. The excellent indices, by authors and by subjects, round out the careful workmanship and exceptional usefulness of the book.

In conclusion it must be stated that the monograph, in addition to its service to investigators, can hardly fail to join the ranks of the volumes reckoned as indispensable in the library of the student, teacher, and practitioner of modern scientific nutrition.

AGNES FAY MORGAN,
University of California.

Positions of Responsibility in Department Stores and Other Retail Selling Organizations. By MARY H. TOLMAN, New York: 1921, pp. 126. \$0.60. The Bureau of Vocational Information.

This volume, the fifth in a series of occupational studies prepared by The Bureau of Vocational Information, of New York

City, presents in a very adequate manner woman's opportunity in department store work. Here we find assembled and recorded facts concerning positions of responsibility now held by women; the customary details of the work involved in these positions; the training, experience, physique, and personal qualities which have been found necessary; the advantages and disadvantages in this field of work, and the opportunities afforded with special reference to women of higher education.

The material is national in scope, embracing data gathered in 176 different stores in 32 states and lower Canada. Information was obtained by questionnaires and letters from merchants, and by interviews with, and questionnaires and letters from, employed women. The bases for the study are, therefore, adequate and substantial. A very well selected reading list and a chart showing typical store organization add further value.

For clear analysis, the author divides Department Store work into six sections: store organization, merchandising, advertising, store service, accounting, allied work outside the store.

Very few women are found holding important positions in store organization; the men are not very apt to let these slip into women's hands for some time to come. The merchandising section, on the contrary, is largely confined to women. Although but a small number of college women have interested themselves in this particular branch of store work and although very few have reached the highest places, there is unusual opportunity in this section for the educated girl. The advertising section is gradually being opened to women, but so recently that few have risen to managerial positions. The care of equipment and of the building offers very little opportunity. The administration of personnel, on the other hand, is generally considered the most promising and attractive work open to women and it is in this division of store service that we find the greatest number of women. The accounting section holds small allure and entrusts women with less responsibility than any other department

of the store. Allied work outside the store, in research, trade papers, and schools, offers countless positions suitable for, and of interest to, trained women. Aside from teaching salesmanship, they have not as yet qualified for them to any considerable extent.

The conclusion drawn from the study is that there is unlimited opportunity for women, especially for college women, in department store work. Their failure in the past has been due to a lack of real purpose and ambition.

The book is well written and should be of great interest and help to educators, to merchants, and to women who contemplate entering store service.

LORNA DIETZ.

Women in the Law. By BEATRICE DOERSCHUK. The Bureau of Vocational Information.

This study, the third of the series of occupational studies prepared by the Bureau of Vocational Information, contains an analysis of training, practice, and salaried positions available for women lawyers. It is a handy compendium, including a table of the law schools which admit women students, a table of the number of women admitted to the bar, a list of government positions for which legal training is a preparation, a list of bar associations admitting women to membership, and a list of women lawyers' associations. About one-sixth of the book is given over to information regarding occupations other than the practice of the law, for which legal training is advantageous. This would seem to indicate that women have not been very successful practitioners. Data for the study were collected from questionnaires sent to 827 women lawyers, 297 of whom replied; from school catalogues; from state offices; and from interviews with individual lawyers, both men and women.

The results of the questionnaires are rather disappointing. Only one-third answered, and of the evidently successful group, only 50 per cent are actually practising law; an additional 11 per cent are working in some

capacity in law offices. The rest are distributed in various lines, reporting, stenography, editorial work, social work, business, and positions that make no use whatever of legal training. Although the author definitely stipulates that the material in hand does not justify definite conclusions, nevertheless the median salary for the group (\$1800.00) does not seem to indicate even moderate success for the average woman trained in law.

The book is terse, well-written and a valuable reference for information regarding general requirements, training for legal work, and opportunities for women interested in law.

LORNA DIETZ.

Cakes, Cookies, and Confections. Pastries and Desserts. Salads, Vegetables, and the Market Basket. Compiled by the Southern Section of the California Home Economics Association. \$.50 each, \$1.30 a set; postage \$.05. Orders filled by Essie Elliott, Manual Arts High School, Los Angeles, Calif.

An original cover design printed in colors on a delicate shade of antique paper, with an envelope of the same paper to encase each book, and an outer envelope enclosing all, make this set of recipe books a most attractive gift packet for the homemaker. The recipes are adapted to home and school needs and have been tested by the compilers. Each group of recipes is preceded by general directions and information in regard to food values. The books are now in their second edition.

The Sponge Cake Family. By MARY LOUISE MEUSER, Friends University, Wichita, Kansas. \$.50.

This booklet gives as standard recipes, for sponge cake and mock sponge cake, angel food and mock angel food, the proportions found to be most satisfactory in a series of experiments carried out after comparing a great variety of recipes. It also discusses materials needed and methods used in making the cakes.

Aids to Family Catering. The University of Washington Home Economics Club, Seattle, 1921, pp. 40. \$0.50.

A very useful book for the homemaker, whether experienced or inexperienced, has been compiled by the Home Economics Club at the University of Washington.

The planning, preparing, and serving of meals are presented under the following headings: Essentials of an Adequate Diet, Suggestions for Planning Meals, Recipes, Table Service.

Under the guidance of this very complete but concise aid, even the inexperienced homemaker should find it easy to cater adequately and attractively for her family or for guests.

Personal Budgets for Employed Women. By Mrs. MARIE LUTTERS STANTON. Architectural and Economic Bureau, National Board, Y. W. C. A., New York City. Price 20 cents.

Budgets of \$1200, \$1500, \$1800, \$2000, and \$2400 a year are suggested for business women living away from home, with schedules of clothing, food, and other items, and concrete suggestions as to ways of putting one's expenditure upon a budget basis. These budgets are an admirable supplement to the account book for professional women which was published some time ago by the National Board of the Y. W. C. A. Both can be secured by addressing the Womans Press, 600 Lexington Ave., N. Y. C.

Black's Simple Cookery and Household Management. Edited by Edinburgh School of Cookery. London: A. & C. Black, Ltd., 1920, pp. 116. Price 5/- net

This book is devoted to a discussion of the economical selection and preparation of food, particularly as adapted to the needs of the small household in Great Britain, and suggestions are given as to the control of waste and good marketing methods. Food values are considered in a simple way, but the information given is very inadequate and somewhat misleading when viewed in the light of present day knowledge of nutrition problems.

Fish Cookery. By EVELENE SPENCER AND JOHN N. COBB. Boston: Little, Brown and Company, 1921, pp. 346. \$2.00.

This very interesting book contains full directions for the cleaning and cooking of all fish found in the markets of the United States. It gives information regarding seasons, price, and nature of fish, and ought to be of the greatest value to the teacher of cookery.

The recipes are interesting and varied, and should relieve the monotony of fish cookery due to a lack of knowledge on the part of housekeepers and teachers.

BERTHA E. SHAPLEIGH.

A Book of Recipes for the Cooking School. By CARRIE ALBERTA LYFORD. Hampton Normal and Agricultural Institute, Hampton, Va. 1921, pp. 299. \$1.50.

While there would seem to be little need for the type of book written by Miss Lyford, it is accurate, except for one or two typographical errors, and will undoubtedly be of value to those who use it.

Food Charts. The Office of Home Economics of the United States Department of Agriculture has recently issued a set of eight Food Selection and Meal Planning Charts based upon a week's supply for a "type" or "average" family, consisting of two adults and three children.

These charts represent a development in popularizing scientific knowledge of nutrition, and they should prove useful to teachers, extension workers, club leaders, social service workers, and others.

The supply of charts available for free distribution is limited but they may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 50 cents a set.

A Week's Food Supply, by Caroline L. Hunt, Farmers' Bulletin 1228, enlarges on the information given in the charts and indicates how they may serve as the basis of instruction in food selection. A copy of this bulletin will be mailed free as long as the supply lasts.

The Care of Leather, U. S. Dept. Agr. Farmers' Bulletin 1183, is again available for free distribution. This bulletin, written by F. P. Veitch, H. P. Holman, and R. W. Frey of the Leather and Paper Laboratory of the Bureau of Chemistry, contains practical suggestions on the selection and care of shoes and other leather articles and gives several tested waterproofing formulas.

Chimneys and Fireplaces—How to Build Them is another Farmers' Bulletin which seems worth bringing to the attention of workers trained in home economics. Everything about the construction of fireplaces and chimneys is carefully considered in this publication.

Hospital Division Circular No. 195, Bureau of the Public Health Service, Washington, D. C. This circular is issued to Medical Officers in charge of U. S. Marine and U. S. Public Health Service Hospitals, to Dietitians, and others concerned. It gives instructions relative to subsistence proposals and the purchase of supplies, including specifications as to quality and suggestions as to the best brands and the most economical amounts to buy.

How John and Mary Save on \$35 a Week. Chicago: The American School of Home Economics. \$0.10.

Under the above practical title an eight-page booklet gives suggestions for a home savings club, a family reserve fund, and allowances for necessary expenses. A simple method of recording all these is presented under the "weekly allowance table" on the last page.

The Pictorial Review has published a series of popular nutrition articles under the general heading "Eat and Be Healthy." Genoise B. Short of New York City and Harriet T. Barto of the Department of Home Economics, University of Illinois have collaborated in its preparation. They present to the housewife and her family the fundamental facts that every one should know, in order to select food intelligently and with the greatest benefit to general health. The first two articles are "Eating to Stay Slender" and "Building Up To The Health Line" in the February and March issues, respectively. These are followed by four others taking up special diets, the common foods, the bride and her food problems, and feeding the whole family.

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NEWS FROM THE FIELD

PRELIMINARY PROGRAM

FIFTEENTH ANNUAL MEETING

AMERICAN HOME ECONOMICS ASSOCIATION

OREGON AGRICULTURAL COLLEGE, CORVALLIS, OREGON, AUGUST 1-5, 1922

TUESDAY, AUGUST 1

2:00 p. m. Opening Session

Address of Welcome, Mary Sweeny, President American Home Economics Association
Council Meeting. Open to everyone
Reception

8:00 p. m. General Session

Address of Welcome

William J. Kerr, President Oregon Agricultural College

A Unified Program of Extension Work for the Home

Florence A. Ward, Extension Work with Women, U. S. Dept. of Agriculture

The Educational Program of the American Hotel Association

L. S. Hawkins, Dir. Dept. Educ., United Typothetae of America

Home Economics and the Business World

Bess Rowe, Extension Editor, The Farmer's Wife, St. Paul

WEDNESDAY, AUGUST 2

9:00 a. m. Food and Nutrition Section

Nutrition and the Present Health Crusade

Health Classes in the Public Schools

Martha Koehne, Assistant Professor Home Economics, University of Wash.

Nutrition in Elementary Schools

Edna White, Director Merrill-Palmer School, Detroit, Michigan

Home Economics for Boys

Mary Ruth Fisher, Supervisor of Home Economics, Twinn Falls, Idaho

Health Clinics: The Pre-school Age

Dr. Ulysses Moore, Portland

Training Teachers for Health Class Teaching

Dr. Caroline Hedger, Chicago

Velma Phillips, State Normal School, Dillon, Montana

Plans for Teaching Practical Nutrition to the Public

How to Reach the Mother, Nurse, Business Woman, Factory Worker

Marguerite Mallon, Purdue University

Margaret Smith, Oregon Agricultural College

Nutrition: Its Application in Commercial and Institutional Problems

Gudrun Carlson, Teachers College, Columbia University

9:00 a. m. Home Management Conference

The Need for the Application of the Fundamental Principles of Home Economics to the Home

S. Agnes Donham, Educational Director, Association for Promotion and Protection of Savings, Boston

The Organization and Administration of Home Management Work

A. Grace Johnson, Head Household Administration, Oregon Agricultural College

Round Table Discussion

Edie I. Raitt, Head Home Economics, University of Washington, and others

9:00 a. m. Home Economics in Business Conference

The Home Economics Work of Business Organizations

In Textiles. Martha J. Phillips, North American Dye Corporation

In Foods. Louise Fitzgerald, National Dairy Council

In Household Management. S. Agnes Donham

Broadcasting Home Economics through the Magazines. Marie Sellers, *Pictorial Review*Teaching Classes of Half a Million. Mrs. Emmons, *The Modern Priscilla*

The Relation of the Home Economics Teacher and the Extension Worker to Business

Round Table Discussion. Led by Helen Louise Johnson

8:00 p. m. General Session

What the Community Owes the Child

Dr. Caroline Hedger

Woman's Part in a National Health Program

Annie W. Goodrich, Nursing and Health Department, Teachers College, Columbia University

Child Welfare (Subject to be announced later)

Harriet Vittum, Northwestern University Settlement

THURSDAY, AUGUST 3**9:00 a. m. Textile Section**

What the Homemaker Wants to Know About Clothing

Ethelwyn Dodson, Extension Specialist in Clothing, Univ. of California

Discussion

A "Close-up" on the Clothing Project

Marion MacKinnon, University of Wisconsin

Home Projects in the 7th and 8th Grades

Ann Platt, Seattle Public Schools

Development of the Work of the Committee on Related Arts

Winifred S. Gettemy, Michigan Agricultural College

Discussion

9:00 a. m. Institutional Economics Section

The Training of Hospital Dietitians

Lenna F. Cooper, Battle Creek Sanitarium

The Teaching of Institutional Management and the Curriculum Necessary for Proper Instruction

Emma H. Gunther, Teachers College, Columbia University

Round Table Discussion

9:00 a. m. Home Economics Extension Section

Are Home Demonstration Programs of Work

- a. Educationally sound
- b. Economically important
- c. Sociologically constructive

C. W. Pugsley, Asst. Sec. of Agriculture, Washington, and others

Round Table Discussion

Legislative Problems Affecting Home Demonstration Work

Florence E. Ward, States Relations Service, Washington, D. C.

2:00 p. m. Business Meeting**8:00 p. m. General Session****International Relations**

Richard F. Scholz, President of Reed College, Portland

Home Economics in Other Countries

China. Emma H. Gunther and L. Ray Balderston

Constantinople. Mrs. Alice P. Norton

England. Emma A. Winslow

New Zealand. Mrs. Ann Gilchrist Strong

Needs and Work of Near East Relief Organization**FRIDAY, AUGUST 4****9:00 a. m. Food and Nutrition Section****Recent Scientific Research in Food and Nutrition**

Minna Denton, Office of Home Economics, U. S. Department of Agriculture

Agnes Fay Morgan, University of California, and others

The Necessary Revision of our College Courses in Foods and Nutrition

Standards of Accomplishments in the Elementary and High School Courses:

Results to be expected from such courses

(Speakers being arranged for)

The Content of the First Year College Course Following the Four-year High School Course in Home Economics

Margaret Fedde, University of Nebraska

Gertrude York, University of Southern California

The Place of Experimental and Investigational Cookery in College

(Speakers being arranged for)

The Content of the Second Course in Foods in College

Ruth Wardall, University of Illinois

Bernice Allen, Los Angeles, California

The Content of Health Courses in College

Helen Thompson, Dean of Home Economics, Kansas Agricultural College

Elizabeth Emery, University of Washington

9:00 a. m. House Administration Conference**Home Management Work in the Extension Field**

Minerva Lawrence, Home Management Specialist, State College of Washington

A Thrift Kitchen as an Asset in City Home Bureau Work

Edith M. Barber, Director of Syracuse Home Bureau, Syracuse, N. Y.

Application of Household Management to the Business Field

Mary E. Keown, Educational Dept., Am. Washing Machine Manufacturers Assn.

9:00 a. m. Home Economics Education Section**Home Economics Instruction and Related Community Service**

In Part-time General Continuation Classes and Schools

The Demand

How to Prepare for It

In Adult Afternoon and Evening Classes

The Demand

How to Prepare for It

(Speakers to be announced later)

2:00 p. m. Textile Section

Methods in Textile Research

Marion Weller, University of Minnesota

Discussion

Testing Textiles for a Department Store

Rose Fraser, University of Washington

Discussion

Business

2:00 p. m. Science Conference

Standards in Home Economics Research

Mina C. Denton, States Relations Service, Washington

What Should be the Lines of Research in Home Economics Departments and in the Related Science and Art Departments

Elizabeth Miller, Head Research Dept., Iowa State College

Some Results Obtained from Experiments with the Respiration Calorimeter

C. F. Langworthy, Chief Office of Home Economics, U. S. Dept. of Agr.

Reports of Committees on Research

2:00 p. m. Homemakers Conference

Within and Without the Home

Mrs. Josiah C. Gawler, General Federation of Women's Clubs, Yakima, Wash.

Responsibility of Homemakers for Home Economics in Educational Programs

Mrs. C. H. Castner, Hood River, Oregon

(Subject to be announced)

Mrs. Lulu Lancaster, University of Arizona

Your Child and Mine

Mrs. J. F. Hill, President Parent Teachers Organizations, Oregon

Round Table Discussion

Led by Elnora E. Thompson, Extension Division, University of Oregon

8:00 p. m. General Session

Educational Value of a Retailers Organization

R. E. Bigelow, President Washington State Retailers Association

Present Status of Women in Industry in this Country

Mrs. Katherine Philips Edson, Industrial Welfare Commission, State of Calif.

Women in Industry and their Relation to Women in Agricultural Pursuits

Mary Anderson, Chief of Women's Bureau, Washington

SATURDAY, AUGUST 5**9:00 a. m. Home Economics Education Section**

Home Economics Instruction and Related Community Service

In Elementary Schools

The Demand

How to Prepare for It

In Junior High Schools

The Demand

How to Prepare for It

In Regular Four Year High Schools

The Demand

How to Prepare for It

(Speakers not definitely determined as yet, but are being chosen from leading Supervisors and Educators of the country.)

9:00 a. m. Institutional Economics Section

Women in Hotel Work

Margaret Ebbitt, Assistant Manager Congress Hotel, Chicago

Employee's Cafeteria

S. E. Crichton, Supervisor Dining Service, Pacific Telephone & Telegraph Co.

Round Table Discussion

High School Dormitories

College Dormitories

Tea Rooms

9:00 a. m. Home Economics Extension Section

Research Problems Related to Home Demonstration Work

Minna Denton, Office of Home Economics, Washington, D. C.

Round Table Discussion

Led by Florence Ward, Dr. Hedger, and others

Additional Special Training for Home Demonstration Workers

Ruby Green Smith, Ithaca, N. Y.

Discussion from the Committee on Requirements in the Training of Home Demonstration Workers

Constantinople College,¹

February 5, 1922.

My dear Friends:

The college is six miles from the city, or rather from Galata bridge that connects Pera with Stamboul and might be considered the center of the city. It stands by itself in large grounds, near the top of a hill overlooking the Bosphorus. This year the college is smaller than it has been for some years, chiefly because so many people who used to be well-to-do have been impoverished by the war, and because exchange is so low, or perhaps I should say high. The lira, or Turkish pound, that used to have the value of the English pound, is now worth about 68 cents, and within a few weeks has been as low as 47 cents. Last fall the Turkish University and the Turkish Medical School were opened to women, and this may have affected our attendance. Then, too, the Bulgarian girls find it much less expensive to go to Germany to study.

The smaller numbers in the college mean very small classes in all departments, especially as the number of electives has been increased each year. My largest class is one of six students. Altogether I have 14 students, and five others who are taking a graduate course in education came to me for a few weeks as part of their course.

Through the first semester I taught dietetics to the nurses in the American hospital in Stamboul seven or eight miles from here. I went down two afternoons a week. The teaching at the hospital has been more elementary than at the college, both because the girls have less educational background and because they have less English.

The course that I have worked out for the college is distinctly a tentative one. It will take at least a year's experience before one can tell what will be most satisfactory. The course that has proved most attractive this year is the "survey" course. We began with a study of the house. Fortunately Dr. Hoover has been having a house built for his family on the college grounds, and we have been able to study that when we wished. Barton Hall, where I live, is an old Greek palace, and there is in it a small kitchen that was very dilapidated. We have made it over into an attractive, fairly modern kitchen where the girls can do some cooking under conditions that they can arrange at home. They planned the changes as a part of their course. Another practical problem we found near at hand. There is not far from us an Armenian orphanage, in a building that is very much run down, and my class

¹ Extracts from a letter from Mrs. Norton to the American Home Economics Association for the meeting in Chicago, February 28.

are "fixing up" the dining room to make it more habitable, and incidentally getting a lesson in house decoration.

In my "house" class we have been comparing customs here with ours in America as well as with those in other countries. This has come about of necessity, for of course the only books we have deal with American conditions. Some time there must be a home economics book for this country. It has been surprising, though, to find how many conditions are similar, and occasionally to find better usages here. The servant problem exists here, as well as in America, and I was much surprised to find that there are two "community" kitchens, on a commercial basis, that are supplying luncheons and dinners for families.

Some of the Turkish schools are teaching home economics. I visited a class the other day at Tchamlidja, across the Bosphorus, in Asia, that was taught by an Armenian woman (the school was Turkish, under Turkish government control) who had done considerable work toward her medical degree. The laboratory was well equipped for cooking, and considerable food theory was taught. The Turkish normal school has some work in home economics, and another school is training girls for teaching dressmaking.

It is amazing to see how rapidly women here are becoming self supporting. Not only Greek, Armenian, and Jewish girls, but Turkish ones as well, are entering the commercial world. Our commercial department here has 55 students. I have come to the conclusion that if we are to make home economics a real success in this college we must not only work for the home, but must direct the work toward professions by which a girl may earn her own living. I have been making inquiries as to possible opportunities. The directress of the Tchamlidja school says that well trained teachers of home economics will have no difficulty in finding places. The American hospital wants a dietitian and would welcome a native girl, and it seems probable that soon other hospitals here will demand dietitians. Managers of orphanages and teachers of home economics in orphanages are needed. There may be openings in tea rooms, but this is more doubtful. I am going on with my inquiries, and perhaps can create a demand for home economics trained girls.

I must say one word about the visit I made last summer to the International Office of Home Economics at Fribourg. The office is small but has a good library, and is ambitious to accomplish many things if it can have adequate support. Mme. Vertellot, who is in charge of the office, is especially anxious for more American members.

With best wishes for the success of your meeting,

Most cordially

ALICE P. NORTON.

The First Pan American Congress of Women gathered in Baltimore, April 20, for a three-day meeting. There were present as delegates thirty-one women representing twenty-two countries of the Americas. The Congress was called by the National League of Women Voters for the purpose of discussing problems of common interest to all countries of the Western Hemisphere and promoting friendship among these countries. The ultimate purpose of the conference was peace through mutual understanding.

Six main topics were discussed: Child Welfare, Grace Abbot, Chief of the Children's Bureau, presiding; Education, Julia Abbot, Bureau of Education, presiding;

Women in Industry, Mary Anderson, Women's Bureau, Department of Labor, presiding; Prevention of Traffic in Women, Dr. Valeria Parker, Executive Secretary of the Interdepartmental Social Hygiene Board, presiding; Civic Status of Women, Mrs. Mabel Walker Willebrandt, presiding; The Political Status of Women, Mrs. Carrie Chapman Catt, presiding. Discussion on each subject was opened by a general statement from a woman prominent in such work in the United States. Then followed a report, from each delegate, of the situation in her own country.

Reports of the Latin American delegates on the educational situation were of particular interest. In several countries the

institutions of higher education have been opened to women only in the last twenty years but there is a keen interest among women to take advantage of their present opportunities. A number of the countries have "definitely organized instruction in homemaking" that would compare with our own work in home economics. The state of Taumaulipas, Mexico, is developing a system of nursery schools; Brazil teaches the care of children to the future mothers of the country through the care of homeless children; in Mexico the care of children and pre-natal care are taught in the Sunday Schools.

The women of the United States discovered that we must "look to our laurels" in our boasted system of public school education. Costa Rica reported that more money is appropriated in that country for education than for any other one department of government.

The climax of the congress was the organization of a permanent Pan American Association of Women. This organization is provisional, but it is the hope of its organizers that it will become a strong factor in maintaining peace and friendship among the countries of the Americas. The aims of the organization are: "To promote general education among all women and to secure for them higher standards of education; to secure the rights of married women to control their own property and their own wages; to secure equal guardianship; to encourage organization, discussion, and public speaking among women, and freedom of opportunity for all women to cultivate and use all their talents; to educate public opinion in favor of granting the vote to women and to secure their political rights; and last, but not least, to promote friendliness and understanding among all Pan American countries, with the aim of maintaining perpetual peace in the Western Hemisphere."

The Program of the Home Economics Department Meeting in connection with the N. E. A. convention, Boston, has been arranged for July 5 as follows:

Subject: The Relation of Home Economics to the Rest of the High School Program.

The Responsibility of Superintendents and Principals, Dr. George A. Works, Prof. of Rural Education, Cornell University.

The Responsibility of Supervisors and Teachers, Edna N. White, Director Merrill Palmer School, Detroit.

Discussion will be opened by Frank Wright, Director Division of Elementary and Secondary Education and Normal Schools, Massachusetts State Board of Education, and continued by Charles K. Moulton, Principal High School, Fall River, Mass., and S. Helen Bridge, formerly in charge of home economics education, University of Nebraska.

Camp Roosevelt, the national educational-training encampment for boys, conducted as an auxiliary of the Chicago public summer schools, and under the auspices of the U. S. War Department, will begin its fourth season on July 5, 1922. This institution has changed its location to a permanent campsite near LaPorte, Indiana, a two hours' trip from Chicago. A gymnasium, mess hall seating one thousand, kitchens, electric power plant, modern sewage system, hospital, classroom buildings, bungalows, dormitories, and recreation rooms afford facilities for comfort and enjoyment in a healthful environment. The new tract includes and surrounds Silver Lake; large fields provide for tentage, sports of all kinds, and parade ground; the surrounding country affords opportunity for hikes in every direction.

The camp is divided into three sections; the summer school, R O T C or military division, and the Junior camp for younger boys. The summer school is operated on the same plan as are the other Chicago summer schools, and credit earned at the camp school is honored on the same basis as that earned in the Chicago schools. On account of residence at the school, somewhat longer hours are available for classes, making possible more intensive work. This results in the completion, in six weeks, of the full eight weeks' course required in the city schools. Camp Headquarters are at 460 South State Street, Chicago.

The Southern Home Economics Association held its sixth annual meeting in joint session with the Florida Home Economics Association at St. Augustine, Florida, April 10-12.

Monday night the delegates were greeted by representatives of the National and State Federation of Women's Clubs, the American Home Economics Association, Business and Professional Women's Clubs, and the educational forces of Florida. The address was given by Dr. Benjamin R. Andrews, Teachers College, on The Home Economics Program.

Tuesday morning, Mary A. Lindsley, Manager of the Grace Dodge Hotel, Washington, D. C., spoke of opportunities for women in institutional administration; Agnes Harris, States Relations Service, talked of the relation between extension work and teaching and research; Anna E. Richardson, Federal Board for Vocational Education, gave an analysis of homemaking.

Tuesday evening Dr. Mary Swartz Rose of Teachers College spoke of diet and physical fitness; Helen Louise Johnson discussed home economics problems.

Wednesday morning was given over to sectional meetings. In the extension section ten minute reports were given by state demonstration agents on "Our Best Piece of Work." Field work in nutrition and a program of work for women's clubs were topics for discussion. In the homemakers' round table, subjects were the budget, a program for homemakers, home problems, and questions from homemakers. In the teachers' section the subject was "What Should the Home Economics Teacher Mean to the Community?"

Wednesday afternoon Dr. C. F. Langworthy spoke on the work of the Office of Home Economics; Dr. Rose outlined newer methods in nutrition work; and Dr. Juanita Darrah reported nutrition studies of the Florida Research Laboratory.

At the business meeting it was decided that the Southern Home Economics Association should become the Southern Region of the American Home Economics Association.

AFFILIATED ASSOCIATIONS

The following state home economics associations have affiliated with the American Home Economics Association with the number of members shown opposite each. At present Illinois is the banner state.

Arizona.....	46	Nebraska. ...	32
Arkansas.....	64	New Mexico...	11
California.....	223	New York	185
District of		North Carolina.	46
Columbia ...	59	North Dakota .	37
Illinois.....	298	Ohio.....	212
Louisiana.....	101	Oregon	64
Maryland.....	90	South Carolina.	32
Michigan	189	South Dakota..	16
Minnesota	44	Utah.....	78
Montana.....	45	Washington ...	98

The following states have reported decision to affiliate but have not yet completed their membership campaigns. Alabama, Kentucky, Mississippi, New England, Tennessee.

Several states have found it necessary to postpone definite action until next fall. It is hoped that before the annual meeting all other states will have made at least the initial steps toward organization.

ARIZONA

The University of Arizona sets a time annually known as University Week, when each high school through the state may send representative students to compete in certain tests held at the University. The prize for each contest is a rebate of tuition and laboratory fees in the freshman year if the winner of the contest attends the University of Arizona. The rebate amounts to from \$15 to \$25, according to the course taken by the student. The contestants in home economics are judged as follows: Cooking—food combination, skill in cooking, management of work, and art in serving; sewing—ability to use a commercial pattern and a sewing machine, to do necessary hand sewing, and to manage time efficiently.

IOWA

Iowa State College. The faculty and students coöperated in planning a great

three-day celebration at Iowa State College, May 11-13. The name "Veishea" was given the event, the letters of the word being the first letters of the divisions, i.e., Veterinary, Engineering, Industrial Science, Home Economics, and Agriculture. Invitations were sent to twenty thousand high school students.

The Sheldon Munn Hotel Management of Ames are giving the opportunity for the students in the Institutional Course to get practice and experience in hotel work under the direct supervision of the manager. It is to be hoped that an increasing number of hotels will be willing to give college women a chance to prove good.

Girls Home Economics Club Work is being conducted in forty Iowa counties. These clubs are fostered by the Farm Bureau in each case and are supervised by the agents and a county club committee. This committee consists usually of from three to five women who are especially interested in the home and community projects put on by the Farm Bureau. The organization is accomplished through a meeting of the girls and their mothers at some home or community hall.

A group of three specialists from the Extension Service will conduct a series of subject matter training schools in each county for the local leaders of girls club work throughout the summer months. The county club committee of Pottawattamie county has made plans for a county camp for their girls the last week in June. The program is educational and recreational.

MARYLAND

The Home Economics Department of the University of Maryland entertained the Home Economics Associations from Baltimore and Washington, D. C., at College Park, May 20. This gathering gave an opportunity for the members of both associations to become acquainted and to learn of the plans for development of the home economics department as presented by Dr. Woods, President of the University.

True Maryland hospitality was demonstrated by the students and the staff in the open house at the girls' home and practice

house and in the delightful supper served on the lawn.

Maryland Home Economics Association. The first spring meeting was held May 13 at the Western High School, Baltimore, the president, Frances Zuill, presiding.

At the morning session, Edith Thomas, State Supervisor of Home Economics for North Carolina, and Regional Councilor for the South, outlined the possibilities in the development of a state organization and urged greater cooperation between home economics workers and practical homemakers, and Miriam Birdseye, of the States Relations Service, spoke on current extension problems.

Following a luncheon arranged by a Baltimore Committee, Genevieve Fisher of the Federal Board for Vocational Education explained the status of home economics in vocational education; Mrs. Mary Hinman Abel gave her impressions of what school girls ought to be expected to comprehend and use regarding family finance; John H. Lewis, Director of Americanization, Baltimore, impressed upon home economics workers their part in Americanization.

Frances Zuill was elected representative councilor; Venia M. Kellar, State Home Demonstration Leader, and Edna McNaughton, State Supervisor of Home Economics, were elected members of the executive committee. The state association has affiliated with the American Home Economics Association with ninety paid members.

MICHIGAN

The Michigan State Home Economics Association held its annual conference for secondary school workers in connection with the School Masters Club meeting at Ann Arbor.

The following program was given: Educational Tests Available in the Field of Home Economics, Grace McAdam, Detroit Public Schools; The Specific Weaknesses in the High School Preparation of Students as Revealed in the First Year of College Work, Jessie E. Richardson, Michigan State Normal College, Ada Tucker, Hillsdale College, Josephine Hart, Michigan Agricultural College; Some Experiments in

Child Training at Merrill-Palmer School Mary Sweeny, Dean of Home Economics, Michigan Agricultural College; The Michigan Plan, Ruth Freegard, State Supervisor; Round Table, Cornelia Simson, School of Home Economics, Battle Creek.

The Dietetic Association of Southeastern Michigan, held its first annual meeting April 20th at the College Club, Detroit. Dr. F. W. Crump of Harper Hospital Staff addressed the meeting on the subject, Diabetes Mellitus. The following officers were elected: President, Louise B. Wilson, Cass Technical High School; Vice-President, Helen Osborne, Board of Public Health, Detroit; Secretary, Dorothy Steuart, University Hospital, Ann Arbor; Treasurer, Adelaide Webber, Harper Hospital, Detroit; Executive Members, Eleanor Johnson, Cass Technical High School.

NEW ENGLAND

The New England Home Economics Association visited the Priscilla Proving Plant in April, as guests of Mrs. MacDonald, the editor of the *Modern Priscilla*.

The "plant" is a real home, where real people live and work. Here experiments are carried on with everything which is involved in homemaking problems. The value of the experiments lies in the fact that the use given each article is the use a family would give it.

The equipment was of much interest, especially the stoves of different types, the linoleum which did not show marks, a dish dryer, folding ironing board, and a specially designed china closet and "efficient" silver chest.

The guests were shown through the workshop where tests are made on textiles, canned goods, foods, and equipment. This workshop is equipped with a large home economics library, which members of the association are invited to use.

The May meeting was devoted to the topic "The Practical Application of Mental Hygiene," presented by Dr. Douglas Thom, Psychopathic Hospital, Boston, and to a business session at which the association decided to affiliate with the American Home Economics Association.

NEW MEXICO

Honorable John J. Tigert, United States Commissioner of Education visited New Mexico, May 8, in the interests of the Federal Board for Vocational Education. All the city and county school superintendents and the heads of the various educational institutions were invited to gather at Santa Fe to confer in regard to the administration of the vocational program for the state. The Commissioner visited the Normal University, Las Vegas, the State University at Albuquerque, the State Normal School, Silver City, as well as high schools in these cities.

Home Economics Teachers Popularize Work. The State Supervisor reports that the home economics teachers of New Mexico have made a special effort toward educating the parents and the community to the need of homemaking courses. Ruth Hanson, Roswell, has prepared special lectures and exhibits for the Parent-Teachers Association. The department at Alamogordo, under the direction of Ruth Morgan, has served several dinners to various community organizations, has arranged exhibits, and conducted a successful Christmas bazaar. The foods class of Stella Wyatt, Capitán, has been serving hot lunches to the school children. During Miss Wyatt's illness the girls assumed the responsibility of serving lunch to 100 members of the Lincoln County Teachers' Meeting. In Clayton, the school board, the faculty, and various clubs and organizations of the city have been entertained by the department under the direction of Anna Howarth. Aline Shepard, in charge of the work at Carlsbad, has organized an enthusiastic "Ellen H. Richards" Club of which each girl in turn is hostess.

Further suggestions for home economics publicity are: Put articles about the department in the local papers. Have students send in newspaper articles describing their projects. Arrange exhibits of class work in a store window or at the school. Give talks before local clubs. Have the home economics department take charge of assembly period.

OHIO

The Ohio Home Economics Association held its annual meeting in Columbus, May 6. The program was devoted to the discussion of clothing. Lee Davis, of the F. & R. Lazarus Company, Columbus, talked on "Style and Style Creations," and Edna Callahan and Jeannette Butler of the Home Economics Extension Service of Ohio State University discussed the presentation of clothing in adult and junior extension work.

At the business session the following officers were elected: Mrs. Blanche Bowers, Columbus, Ohio, President; Prudence Stevens, Ohio University, Vice-President; Clara Bancroft, Columbus, Secretary; Frances Gregory, Dayton, Treasurer. The following were named on the executive council: Marie Sayles, Ohio State University; Helen Sawyer, Columbus; Alice Swisher, Miami; Enid Lunn, Columbus; Bertha Nixon, Kent Normal School; Laura Heston, Bowling Green Normal School. Marie Sayles was designated to represent Ohio on the council of the American Home Economics Association. Tentative plans for next year were announced with four meetings; October at Dayton; December at Columbus; March, placed to be announced; annual meeting, May at Columbus.

The Ohio association has affiliated with the American Association and now has 212 members.

PENNSYLVANIA

The Drexel Institute. Dr. Kenneth G. Matheson assumed the duties of the presidency of Drexel Institute the first of May. Dr. Matheson comes from Georgia Institute of Technology where he has served successfully as president for seventeen years and is a recognized leader in education. It is his desire to develop the Home Economics Department to its fullest. Plans have already been completed for the extension of the Junior College work to a three year course which offers an opportunity for good foundation courses in food and clothing. The Senior College Course has been reorganized into a strong, well-balanced course. A number of students are now working for their degrees, and the indications are that there will be a larger enrollment in the fall of 1922.

The Alumnae of the Institute gave a reception and banquet in honor of Dr. and Mrs. Matheson on May thirteenth in the Great Court. About two hundred alumnae attended.

MINNESOTA

Dunwoody Institute, Minneapolis, will offer a series of conferences during the summer months for the benefit of those interested in the work of administrators, supervisors, or instructors in trade, industrial and mechanic arts through day, part-time, and evening classes. In addition, the Federal Board for Vocational Education will carry on a series of conferences on foremanship training and foreman conference training, and a special conference on home economics training.

UTAH

The Utah Home Economics Association is actively coöperating with the National Association. Alice Kewley, president and state chairman for increase of Journal subscriptions, and Jessie Whitacre, state chairman for the American Home Economics Association Executive Secretary Fund, jointly sent a letter to each home economics worker in the state, with the following suggestions: That each home economics worker be a subscriber to the Journal. That each home economics worker be a member of both the state and national associations. That each home economics worker contribute at least \$1.00 to the Executive Secretary Fund. That the home economics staff in every educational institution of the state make of the home economics classes, or already organized home economics club, an "interested organization" which shall contribute to the Executive Secretary Fund. Utah's contribution to the Executive Secretary Fund is now \$165.25. The national chairman, Mary L. Matthews, when acknowledging the above sum said, "I certainly feel that Utah has done her part for this year. I hope you will express to the other women working with you my appreciation of their interest." The at-home benefits of this work can be seen in the strengthened state association through its closer connection with the national organization.

WISCONSIN

The Wisconsin Home Economics Association has organized this year, with its officers and an executive council. This council has drafted a constitution which is to be presented at the fall meeting of the association, and it is hoped that affiliation with the American Home Economics Association can be perfected at that time.

The home economics teachers in Wisconsin are showing their professional interest by the formation of local clubs to study teaching problems. Seven such clubs have already been formed. The membership of each one is made up of teachers within a radius of fifty miles or less, who can meet at some central town three or four times a year. The programs consist of talks by distinguished guests, or of round table discussions on topics of professional interest. The organization is informal, and the atmosphere is one of friendly cooperation. These clubs are linked with the State organization through their chairmen who are ex-officio members of the state executive council.

The Stout Institute. The practice classes in clothing have recently given a public performance in the auditorium in which each grade staged a playlet, song, or pantomime to illustrate the semester's projects. Copies of the songs and material used may be obtained in mimeographed form for 25 cents.

The seniors who are majoring in foods and nutrition have charge of a health class of undernourished children, reported by the school nurse.

Last September, a cafeteria for students and faculty was opened in the household arts building. It has proved helpful in the development of the course in cafeteria management as a laboratory for large quantity cookery. Classes in foods and cookery have been serving luncheons and buffet suppers to groups of faculty members.

With the exception of some of the science work, all courses are offered during the summer session, which will be only nine weeks this year. This is popular with teachers, who are thus enabled to use more of the vacation to advantage.

Milwaukee Downer College. All students of the senior class, majoring in home economics, are required to give one demonstration lecture on some phase of home economics. These lectures are planned for groups of housekeepers and are open to the public. Sixty housekeepers were present at the April demonstration.

Susan F. West, Director of the Home Economics Department, has given a series of twenty evening lectures on nutrition and dietetics to a group of Milwaukee home economics teachers, taking up the newer phases of nutrition and its application to dietaries.

Girl Scout Clubs in all parts of the city have strengthened the work of home economics teachers. Since thirteen out of forty-seven proficiency tests and special medals are given for homemaking arts, the Home Economics Department of Milwaukee-Downer College was appealed to for help, and Miss West has given a normal course of four lessons to the Girl Scout leaders.

NOTES

Mrs. Hannah Cuthbertson, of the Applied Art Department of Stout Institute, will sail in July for China and the Orient. She will be employed for a year or more to assist Chinese designers in modifying their designs for American trade; also to act in the capacity of advisor to the American buyers.

Daisy Alice Kugel, Directory of the School of Household Arts of Stout Institute, will spend the summer in Europe. She will visit schools in England, France, and Belgium.

Government Needs Dietitians. There is urgent need at hospitals of the United States Public Health Service for dietitians in connection with the rehabilitation of disabled soldiers, sailors, and marines. Applicants are not required to report for a written examination, but are rated upon the subjects of education, training, and experience. Full information may be secured from the United States Civil Service Commission, Washington, D. C.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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RECONSTRUCTION DAYS IN HOME ECONOMICS

ISABEL BEVIER

Professor Emeritus, University of Illinois

In common with the rest of the world home economics is in the midst of its reconstruction days. Reconstruction is always a difficult and delicate task: difficult, because it may require the uprooting of traditions and customs established often with toil and pain; delicate, because, while it is an attempt to give to cherished ideals a new form, it seems sometimes to destroy them. But that way, all recognize, lies ultimate progress. "New occasions teach new duties. Time makes ancient good uncouth" is a statement constantly being demonstrated in home economics.

The difficulties in this particular instance are increased by the fact that home economics has so many vulnerable points. In most occupations there are "honorable points of ignorance" for the layman; not so as regards home economics. No wayfarer on the highway of life but considers himself a very competent critic of some one of its numerous phases. The recognition of this fact brings recognition of its corollary. The contacts are all made in home economics, the doors are all open. It remains for its advocates to enter in and possess the land.

In these days it is quite the habit to blame all the ills of life upon the World War, but home economics has a very different story to tell, for here the war was a great benefactor. The public learned more about food and nutrition and the relation of food to health in one year than in any ten years preceding. The vital relation of food to health and efficiency was demonstrated on a great scale by the army and the ill-nourished children of other lands. The vocabulary of food was acquired by the layman rapidly. Calories were removed from the funny column of the newspaper and became the measuring unit of the food resources of the Allies.

Real advance in the estimation of the public in home economics in war time was made chiefly along the lines of food, economics, and research. The necessity of the situation put emphasis upon wise spending for both food and clothing, and showed the desirability of having the woman

as the spender of the income made as intelligent as possible. The government undertook the teaching of thrift on a large scale. Again, the need of much knowledge for the answering of numerous questions emphasized as never before the need for research. The National Research Council gave home economics a place in its counsels. As a result home economics had one grand demonstration from shore to shore during the war. It nearly killed us off, but it made us and our cause eminently respectable.

As I see it, reconstruction means adjustment in the teaching of home economics in regard to:

- a. Subject matter
- b. Method of presentation
- c. Equipment
- d. Larger relations to the school program and through that to the social program of the community; importance as an interpreter and defender of the ideals of the American home.

Subject Matter. The attempts to use substitutes, to teach those less familiar with food and its uses, required and still require a considerable weighing and balancing of the subject matter, a discarding of the non-essentials and an emphasis upon the essentials. A lesson in preparing food now is not an isolated performance for the purpose of learning manipulation, but the dish to be prepared is selected with care to illustrate as many points as possible and when finished is given its setting in a meal, its cost, its food value, its sequence, its relationships to production and the larger aspects of the food question.

The Method of Presentation. In common with other subjects of the curriculum, home economics has been assailed by the project method, by unit courses, by tests for appreciation, for reasoning, for skills, for information, and there has been much talk about objectives, ultimates, specifics, and activities. The writer confesses to a good deal of sympathy with the woman who said she did not understand very well about dividing up the brain for so many different jobs; so far as she was concerned she wanted her pupils to be using all the brains they had all the time for all the divisions. However, it is doubtless possible that, in this orgy of curriculum making and testing which is now going on, home economics may emerge stronger and better, representing the survival of the fittest.

Equipment. Home economics is not an experiment. In the forty years in which it has been worked at with more or less intelligence many isolated facts have been discovered, and new relationships which are of use in the making of school programs and courses of study have developed. It is quite generally known what constitutes a well planned

school kitchen, even if some blind leaders of the blind are aspiring to mahogany table tops and tiled floors, and others would solve all the difficulties by a unit kitchen. The consensus of opinion seems to be that there are many possible types because of many varying conditions, each good after its kind. Unit kitchens have their place even if in some cases they result in a stove which is little more than the discarded hot plate, and the oven very little better than the one used with the hot plate. One good range with a well-lined oven and an accurate measurement of temperature is worth much more in real advance in food work.

A word of warning is to be given against equipment whose one virtue is expense. The day of reckoning will surely come when home economics kitchens as other kitchens will be judged by their adaptation to meet the needs of the community and their capacity for accurate work. Another word of warning is to be sounded against a great desire to be too accommodating to the makers of school programs. Cooking processes require time. The work needs to be done thoughtfully and carefully, not with the one aim of getting through. Therefore, the one hour program for food work is not to be considered desirable. One great mistake is still to be charged to principals and superintendents who expect the teacher of home economics to welcome to her class representatives from every one of the four years of the high school, but never think of asking that accomplishment of the teacher of mathematics.

Larger Relationships. The public demands are to be recognized. The tests many and varied are to be met, but the workers themselves must keep ever in mind the larger aspects of the question. Man does not live by bread alone—economics can not do everything. Spirit and life have their sources too and must be cherished.

Home economics workers must not be so occupied in making whitesauce or its counterfeit paper-hangers paste, that they forget that the art and beauty of life are included in their programs; that the finer forms of social intercourse, the development of gracious womanhood have their place in home economics training. The public wants what was best in the old forms of family life represented in the modern life. It should be enriched by the discoveries of science, the development of art, the social and civic responsibilities. But it must be permeated by the spirit of service and loyalty to the highest ideals. Only as home economics meets these larger issues does it render its best service to the nation.

METHODS OF VITAMIN INVESTIGATION

ELIZABETH W. MILLER

Iowa State College, Ames

Among vitamin problems of paramount interest to home economics teachers are those which deal with the quantitative distribution of each of the vitamins in foods and the effect of cooking, storing, drying, and other methods of preservation on these accessory factors as they occur in foods. Such questions as the effect of temperature, the surface exposed to oxidation, acidity or alkalinity, solubility in the cooking water, on the rate of destruction of the vitamins are all very practical ones which are not conclusively answered, as yet, and which might well be studied by women who are familiar with the cooking processes.

McCarrison's (1) recent work on vitamins has given a dramatic demonstration of the fact that there must be, within limits, a balance maintained among the different food constituents, and that, if that balance is disturbed, the "metabolic harmony" ceases. When we consider our inadequate knowledge in regard to the quantitative aspect of practical dietetics, we realize the importance of careful work along this line. There is then a wide field for investigation, both in learning what constitutes a complete diet and in determining what foods may be combined to make a complete diet.

In reviewing the literature on vitamins, one is impressed with the widely differing conclusions reached by various workers. This is but natural considering the difficulties. Until the chemical nature of the vitamins and methods of isolating them are known, we must necessarily work with preparations which are mixtures of substances of unknown composition. Then, too, the laborious biological feeding method introduces many variables which may not be controlled, especially by the inexperienced worker.

Impressed with the importance of standardizing the quantitative method of vitamin determinations, Emmet (2), Sherman (3), Funk (4), and others have recently called attention to some of the points which must be observed, if significant results are to be obtained. They will be discussed briefly here. For more complete information, the reader is referred to the articles and books listed in the bibliography.

I. *Biological reagent.* Since quantitative chemical determinations of the vitamins cannot be made, the biological method is the only one available. The first problem, then, is to find a form of plant or animal

life which will serve as a suitable "reagent," that is, a form of life which requires the particular vitamin under investigation for its development, and shows characteristic effects when the vitamin is lacking. For a study of vitamin B, the tadpole, paramecium, yeast, chick, pigeon, and rat have been tried. Of these, the pigeon and rat have, up to the present time, yielded the best results. For a study of vitamin A, the rat, and for vitamin C, the guinea pig, are the standard laboratory animals, although several others are being tried.

The requisites of a satisfactory animal for feeding experiments are that they shall breed easily, mature early, consume a small amount of food, take artificial diets readily, stand confinement well, and be resistant to infections and intestinal parasites. The rat meets these conditions more nearly than other animals and has, therefore, been generally used for the study of vitamins A and B. Since the rat does not develop scurvy, it is of no value in a study of vitamin C.

A very important factor is the condition of the experimental animals. It is thought best that they be bred by the investigator. Emmett in his work with pigeons has found that "it is necessary to consider breed, previous feeding, age, body condition, weight, and season of the year." Sherman's experience with guinea pigs in the study of vitamin C indicates that animals six to eight weeks old and weighing 300 to 350 grams, give most uniform results. "If the animals are much younger, the results are somewhat less regular; if much older, they are somewhat less susceptible and also less desirable in that they are less likely to show good growth up to the time of the onset of the scurvy symptoms."

II. *Control diet.* A basal control diet must be found which is complete for growth and maintenance of the experimental animal. In spite of the vast number of investigations done with rats, Funk questions whether the optimum growth curve of these animals is known. A comparison of the normal weight curves of Osborne and Mendel and McCollum with that of Funk shows the latter to be on a much higher level. This raises a doubt whether diets which have been considered complete have actually met all the nutritional requirements of the rat. In addition to the control diet, experimental diets must be found which are known to be complete in every respect, except the one factor that is being studied.

III. *Artificial diet.* In the preparation of the artificial diet, it is essential that all the ingredients are vitamin free. Many of the differences of opinion among workers have arisen from the fact that this precaution was not observed. The commercial casein, frequently used as

the protein, must be further purified by extraction with alcohol and ether, or by dissolving in alkali and reprecipitating. Lactose, which has been widely used as a constituent of diets, was shown by McCollum and Davis to contain appreciable amounts of vitamin B, and must, therefore, be subjected to purification. Sherman, Le Mer, and Campbell (5) have found that dried milk powder, desiccated on open trays at 110° C. is completely free of vitamin C, while fresh milk autoclaved at 120° for one hour still contains small amounts of the vitamin, the presence of which must vitiate the results to some extent.

IV. *Preparation of vitamin material.* An exact method of procedure must be followed in making the vitamin preparation. As has already been stated, until the vitamins can be isolated we must of necessity work with mixtures of substances. Workers frequently have not given a sufficiently explicit description of the mode of preparing the vitamin extract, and this has led to confusion and controversy. The question is not yet settled whether the antineuritic vitamin and vitamin B are identical. Recently, Funk and Dubin have proposed that the vitamin B preparations which have been used have contained at least two vitamins, or perhaps, two forms of the same vitamin, both of which are necessary for the rat, one necessary for the pigeon, and the other for yeast. Then, again, the order in which constituents of the diet are combined should be uniform, since it may affect the texture and palatability and thus the food consumption.

V. *Administration of vitamin.* The vitamin preparation should be administered so that the quantity is known. It may be desired to test its prophylactic or its curative properties. Thus, the amount of vitamin B preparation necessary to prevent polyneuritis in pigeons, or to promote normal growth in rats, may be determined, or the amount required to *cure* polyneuritis, or to *restore* normal growth after the rat has ceased to gain in weight. For practical purposes the prophylactic effect has probably the greatest significance. Again the vitamin preparation may be incorporated as a constituent of the diet or it may be administered separately from the basal ration. In the first case, the minimum proportion in which the vitamin preparation must enter into the food mixture to obtain the desired results is determined. In the second method the "minimum daily dose" of the vitamin preparation is found. This latter method is the more satisfactory unless a food such as corn is being tried, which could not be given in doses in addition to the basal ration without increasing the food consumption.

If the effect of cooking on the vitamin content of such food is to be determined, the minimum amount of the unheated material necessary for growth or protection against a deficiency disease must first be determined. Then the minimum quantity of this same food, cooked, which is necessary to produce the same result is found. A comparison of results will then tell what proportion of the vitamin has been lost. Unless the *minimum* is determined in both cases, the results can have no quantitative value.

VI. *Amount of food consumed.* This illustrates the importance of knowing the daily food consumption of the experimental animal. If the material used as a source of vitamin is incorporated in the diet, no knowledge of the actual amount of vitamin required can be obtained unless the total quantity of food eaten is known. Also, without such information the effect of inanition or of other dietary deficiencies may be confused with a vitamin deficiency.

Since the food consumption may vary with change in diet, or change in texture and palatability of the food mixture, these points must be kept constantly in mind. To obviate the loss of food by scattering, various devices may be adopted, such as the use of special food cups.

VII. *Importance of hygiene.* The recent results obtained showing the effect of sunlight in the prevention and cure of rickets introduces another factor which is doubtless of importance in animal studies. Ventilation, temperature, cleanliness, freedom from vermin and infections, exercise, all should be given due consideration. The recent controversy as to whether xerophthalmia is the direct result of a deficiency of vitamin A, or due to an infection entirely controllable by sanitary precautions is an illustration of how difficult it is to make certain that the dietary factor is the major one.

VIII. *Duration of experiment.* The tests must be run long enough to make the results conclusive. When animals are put on a new diet, the food consumption is likely to decrease unless they are force-fed. Failure to respond might in such a case be due to insufficient food rather than to any deficiency.

IX. *Specific deficiency effects.* Finally, the characteristic effects of the specific dietary deficiencies must be learned by experience. Observations of weight curves, body condition, survival period, and autopsy findings are all significant. Sherman, La Mer, and Campbell (5) have worked out a scheme by which grades of severity of scurvy may be differentiated. It illustrates the newer development of the *quantitative* aspect of vitamin investigations.

Desirous of standardizing the methods of carrying on vitamin investigations, Emmett (2) has proposed that several laboratories cooperate in formulating a definite working plan as to basal rations, animals, and technique of feeding.

A committee has been appointed consisting of A. D. Emmett, A. F. Hess, E. V. McCollum, L. B. Mendel, and H. C. Sherman representing the American Society of Biological Chemists, the Society of Experimental Biology and Medicine, and the Committee on Food and Nutrition of the National Research Council. The function of this committee is to consider the advisability of clarifying, unifying, and, if possible, suggesting means of improving present methods of vitamin research.

A cooperative plan of this sort should aid greatly in obtaining consistent results and arriving at definite conclusions.

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THE APPLICATION OF DESIGN AND COLOR TO MILLINERY¹

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Millinery is not only a big commercial problem in our country but is a constantly recurring personal problem for every woman who attempts to keep within the style limits. There are many agencies engaged in teaching millinery in its various forms. Among these are the public schools, including junior and senior high schools, technical, trade, and night schools, normals, and colleges. While our normals, colleges, and

¹ Extracts from a paper given before the Connecticut Valley Home Economics Association.

some of the technical schools prepare most of the people who go into the teaching profession, it is left for the other branches to prepare people to do millinery work for either personal or commercial purposes. It would seem, then, that the function of the junior and senior high schools should be to lay a firm and lasting foundation for these other agencies, and to help those people who are not going into the millinery business, but must needs select hats from time to time.

Let us consider the foundation that should be laid in all elementary millinery work if the average person is to be able to judge or create a good hat.

First: a working knowledge of the fundamental principles of design. There should be an understanding of such terms as line, balance, symmetry, monotony, proportion, and suitability to person and purpose, so that these terms may be intelligently linked with the other phases of millinery.

Second: an understanding of the human feature and form types. This should include a study of blondes, brunettes, and combinations of the two; the various types, as cute, dignified, severe, distinctive, and the great mass of people known as ordinary. Then there is the classification as to form—tall and slim, short and stout, with many variations. These types resolve themselves into two main classes of women; those who ought to avoid points and long severe lines; and those who need to beware of circular, square, or squatty effects.

Third: a practical knowledge of color. Someone has said that an understanding of color is the crying need of the nation's women. It is not necessary to have an intricate knowledge of color terminology. One does not have to worry about such terms as Pekin blue or Harding blue, but should be much more concerned as to whether a blue has a grey, green, yellow, or violet cast, and which of the many varieties of blue is best suited to the particular type under consideration. Every complexion has a keynote or tint, and colors should harmonize not only with the features of the complexion but with all other colors worn. Pupils should understand harmonies of contrast and similarity and the value of texture combinations. Girls should be taught that they must understand color in its simpler forms before they attempt subtle combinations, and that they can emphasize their good features by selecting certain lines and colors.

To make our work effective, we need a sympathetic backing from our superiors, which would insure proper conditions for correlation with the art departments in our schools, and we need teachers of millinery who

understand both the art and technical sides of the problem. With a suitable background laid in our elementary schools and the elementary departments of the advanced schools, anyone with ordinary talent for millinery can take advanced and technical work in schools, or in millinery departments of stores or shops.

Is it really economical for all girls to learn to make hats? If time and energy are to be considered, the average business woman or mother ought not to make hats for herself or her family. Millinery courses in schools are expensive and only one girl out of ten has a real "feeling" for hats, or anything like a milliner's touch. It would be far more sensible to include in the clothing course considerable work in the application of design and color to millinery, and to let the actual making of hats come later as an elective. The girls would be old enough to handle the materials intelligently, and such study would result in a knowledge of millinery in general which would prove a lasting satisfaction.

AN ANALYSIS OF THE FIELD OF INSTITUTION MANAGEMENT AND THE PREPARATION FOR IT¹

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The accompanying chart was drawn up as a means of showing graphically the fields of institution management, in order to organize a curriculum which would be satisfactory in preparing students for institution management work.

To prepare adequately for an occupation, it is necessary to know the specific responsibilities and activities of that occupation. Therefore, in the first column of the chart the various phases of the work have been listed as shown under "fields;" in the second and third columns is given the information one must have in order to qualify for positions in these fields; in the fourth and fifth are listed the courses which supply the required information, the fifth showing those courses which are basic and which in a college four year course are given first in the curriculum. This last group also shows the related work essential to a knowledge of the occupation. While the subject matter will remain the same, the courses offering this information will vary, necessarily, in different schools and colleges.

¹ The authors wish to thank Mildred Weigley, Chief of Division of Home Economics, for making important suggestions in the preparation of this paper.

Necessary information		Contributing courses	
		Home economics courses	Related courses
Occupational skill	Care of food	Purchasing Dietaries, menus Preparation Service Storage Disposal of waste	*Marketing Food study Dietetics *Quantity cookery *Institution experience Sanitation
	Care of physical plant	Heating, lighting Ventilating Sanitation, cleanliness Repairs, upkeep	Home equipment *Institution management problems *Institution experience
	Record keeping	Filing Accounting Correspondence	*Institution experience Economics Accounting
	Care of money	Cashing, checking Depositing	*Institution experience
	Care of linen	Repairing Marking Laundering Storing	Textiles *Institution experience *Institution management problems
Administration	Organization of new work	Organizing, charting Plans and policies regarding land, building capital, credit, equipment, labor, profit, growth	Industrial history Economics Business organization
	Employment management	Selection, placement Scheduling, duties Hours, wages Living conditions Recreation	*Institution management problems *Institution management practice Psychology Sociology Economics Labor problems
	Superintendence of plant	Establishing system Plant planning Equipment Decoration	*Institution management problems *Institution management practice Architecture Art Design
	Financial management	Budgeting Control of costs Purchasing Investments	*Institution management problems *Institution management practice Economics
	Atmosphere	Relation of manager to patrons, employees	*Institution experience *Institution management practice Psychology Sociology

To be sure that the content is cared for in the courses given, the institution working on this problem planned its curriculum in relation to the content as shown in column four. The four courses starred deal specifically with institution management. Institution experience and large quantity cookery which comprise laboratory and lecture work are prerequisite to institution management problems. The latter course takes care of the administrative phases of institution work. Institution practice is a laboratory course in institution administration and follows the lecture course.

It would seem that one of the most important points in the teaching of institution management is to establish a satisfactory sequence of courses which shall give, together with subject matter, a graded experience to the student who comes into institution management work interested, but with no very clear idea of what it means and therefore with little background for the study of the more advanced problems of administration. This analysis has helped to make clear the importance of a sequence of courses. It would seem advantageous for students to have a working experience in an institution before taking up the study of the problems of organization, labor, plant planning, and equipment. It has been found also that while a working experience is necessary, practical experience outside the courses offered in the college curriculum, may prove an actual handicap. This, of course, depends entirely on the institution in which the practical experience is obtained. It is wise therefore to hold rather strictly to the prerequisites as outlined in the courses of study, regardless of the fact that there are constant demands from students who wish to enter the management lectures by substituting previous experience for large quantity cookery and institution experience as offered in the course of study. Another advantage in offering this sequence of courses is that students not fitted for the work are eliminated promptly. Also, the fact that large quantity cookery and institution experience may be taken as electives means that an interested student may try herself out in institution management work without the expenditure of an undue amount of time in case she does not wish to continue.

It may be said that instead of the course in institution management practice mentioned above, a six weeks to three months assistantship, similar to that required of hospital dietitians may be substituted. In this latter case, it is necessary that students be given work in approved institutions only. If this plan is adopted it must follow the completion of the institution management courses and would probably be taken after completion of the work for a degree.

A COURSE IN BUYING INSTITUTIONAL EQUIPMENT AND SUPPLIES

EDA LORD MURPHY

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Since courses in institutional administration are being developed simultaneously in many parts of the country, it may be of interest to know how we have met the demand at the Iowa State College. We now offer the following courses: Institutional Foods, Buying of Institutional Equipment and Supplies, Institutional Management, Institutional Field Work.

In general the second course includes: study (in detail) of institutional kitchens, selection of kitchen equipment and dining room, bed room, and living room furnishings, cost of upkeep and replacement, large quantity buying of foodstuffs, preparation of a project selected by each student in line with her special interests.

On our campus we have five dormitory kitchens under the supervision of a graduate in home economics. They offer a remarkably fine field for observation, as the standards of order and cleanliness are extremely high. The cooks eagerly consult with students from the Division of Home Economics about equipment. Students visit the kitchens in groups of two. The kitchens of the college cafeteria and the college hospital are also open to us. In the town of Ames, we have access to commercial cafeterias as well as to the hotel and hospital kitchens, through the courtesy of the managers who understand our purpose.

In addition to this, the classes make an educational trip to Des Moines to visit the tearooms managed by large department stores, as well as commercial cafeterias, large hospitals, and hotels. By the time this trip takes place the class has had a thorough preparation for it, by the detailed study of institutional equipment: ranges, gas stoves, refrigerators, steam tables, urns, bread and butter cutters, dish washers, in a large variety of makes and styles have been discussed as to their desirable and undesirable points, so that there is intelligent interest when a chef offers to have his dish washer or his favorite mixer exhibited in action. The observation of details is growing to be such a habit that the students are almost afraid they will be found turning over their plates at a luncheon to get the name of the ware, or hunting for the trade mark, or the hall mark on a friend's silver!

The purchasing agent of the college gives lectures each quarter on centralized buying. The subject of the ethics and procedure of establish-

ing credit with business firms is developed. Buyers, whose extensive experience and success are well known, give some of the other practical aspects of dealing in large quantities; for instance, buying in carload lots, storage and handling of meat, and dealing in futures.

We do not attempt in this course to include administrative phases of institutional work, as these problems come properly in institutional management. We do, however, study the storeroom, requisition systems, and the modern perpetual inventory methods, because they are inextricably bound up with the details of purchasing and distribution within the institution. The students make the wholesale orders for groceries for the daily luncheon and tea service. They also check the bills and learn to read the strange abbreviations of the trade. They estimate the discounts, and incidentally learn the sources of supply.

The class is making a collection of samples which will become a permanent exhibit: for example, insulating materials for refrigerators, filling for mattresses, samples of institutional cotton and linen, and the many other materials which show differences in value and will make points in selection more clear. We make constant use of hotel and hospital magazines, the JOURNAL OF HOME ECONOMICS, and others which include an institutional section. The undergraduates are encouraged to take summer positions in kitchen or dining room work as preparation for these courses. A number of the girls go to National Park or the lake resorts and combine institutional experience with the pleasures of travel and vacation.

We hope to develop the kinds of courses which will attract women of talent and experience, who have not had opportunity for technical training, as well as graduate students who wish to specialize. Other departments on the campus coöperate to enrich our courses. The Department of Economic Science offers a course in institutional accounting; there are electives in business psychology, applied art and history, journalism and advertising, and other related subjects which, woven together, give the student, who wishes to specialize in this phase of home economics, a broad background.

To quote Mary A. Lindsley of the Grace Dodge Hotel, the important part of institutional work is not what is done but "how it is done and what is done to glorify it." Certainly this is our function in college teaching, to glorify work, and to direct and stimulate the enthusiasm of college students, for it is they who in the near future will become the competent assistants, the clever purchasing agents, the wise and efficient managers of public dining rooms.

PROJECT METHOD OF TEACHING LUNCH ROOM AND SPECIAL COOKERY

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OUTLINE OF SECOND YEAR HIGH SCHOOL COURSE

TIME, $1\frac{1}{2}$ HOURS DAILY FOR 20 WEEKS*Aims of the course*

- To develop girl's responsibility.
- To develop managing ability.
- To train girls to think for themselves.
- To teach proper food for children of different ages, especially of school age.
- To teach good eating habits.
- To teach girls to enjoy all foods.
- To improve the family dietary.
- To make girls intelligent buyers of food.
- To increase speed in preparation of food.
- To teach economy in the use of fuel.
- To teach neatness and orderliness in all work.
- To develop ability to take entire charge of one's home food problems.
- To develop ability to plan, prepare, and serve suitable meals for all types of people.
- To develop ability to figure costs in money and labor quickly, also to estimate same.
- To teach simple banking.
- To teach accounting and its value.
- To teach appreciation of the value of personal influence and to know how to use one's own for improvement of conditions in markets, bakeries, dairies, etc.
- To develop a true spirit of hospitality.

Units of the course

A. Informal receptions for mothers, H. E. Day, etc.

Discussion of purpose of gathering. Selecting guests. Invitations. Planning entertainment. Program of some sort. Exhibition work. Conversation. Place for wraps. Types of refreshments usually served—very simple, more elaborate. Decoration of room and table. Actual preparation of food. Serving. Marketing. Receiving and entertaining.

B. Food sales

Discussion of foods usually served. Foods for which there is the greatest demand and those on which the most profit can be made. Planning and arranging for place and date of sale. Means of advertising—making posters. Consideration of dishes for sales at special times, e.g. plum pudding at Thanksgiving time. Management and conduct of sale. Use of oven to best advantage. What foods can be made ahead. Actual baking. Actual sales. Figuring profits.

C. Box lunches

Study of general characteristics of good box lunches. Requirements of a box lunch for school children of different ages; for older members of family. Containers and packing. Comparison of cost of packed lunch with cost of cafeteria lunch. Hygiene of eating lunch. Preparation of individual foods that might be carried. Marketing. Preparation and packing of lunches for various ages of children and types of adults. Putting up train lunches for teachers at vacation times.

D. Picnics

Study of different types of picnic meals. Value of picnic as a recreation. Attractive picnic places in vicinity, how to get to them, effort and length of time it takes, advantages and disadvantages of each place. Planning food for picnics for different groups. Distribution as to what each shall bring. Entertainment. Cooking picnic foods. Service. Marketing. Actual picnics. The indoor picnic for winter months studied and given. Figuring costs.

E. Special Dinners

Study of more formal dinners. Room and table decorations. Making and buying place cards, favors, etc.; cost and attractiveness of each compared. Invitations. Receiving guests. Kind of meal dependent on types of those served. Table service. Preparation of special foods with special attention to fancy dishes. Planning, marketing for, preparing, and serving actual meals. Figuring costs.

F. Cafeteria

I. Organization at school.

A. Time—Every day throughout the course.

B. Content.

1. Points to be considered.

(a) Need of cafeteria in community.

(b) Educational value to patrons.

(c) Necessary food for school children with special reference to undernourished.

(d) Organization of work.

(e) Marketing.

(f) How improve on last year's cafeteria.

(g) Study of fuels used.

(h) Actual preparation of foods with special attention to neatness, cleanliness, attractiveness, speed.

(i) Serving.

(j) Cleaning up afterwards.

2. Method.

(a) Discussion of the need and the educational value.

(b, c) Reference work regarding dietetic needs of school children, including undernourished. Newspaper articles regarding same written by girls in English classes, if possible, and published in school and village papers. Posters advocating use of milk, etc., made and exhibited in rooms, some made in drawing classes. Talks or papers presented by girls to grade rooms. Reference work—how to vary essential foods.

(d) Girl to be manager with entire responsibility for one week early in course and another week later on. Contest as to best manager from standpoints of good managing ability, satisfactory results as to foods served, satisfaction of patrons, condition of room, profits. Trip to bank, study of checks, bank book, balance sheets.

(e) Trips to local bakeries, markets, and stores.

(f) Discussion of the good and bad points of last year's cafeteria. Girls write to other schools to find out their methods.

(g) Keeping records of amount of fuels used and cost of same.

(h-j) Discussion and reference work on points to be observed in cooking, serving, cleaning.

II. Home work.

All girls required to prepare material for posters and news bulletins, look up recipes and magazine articles, write letters, and get suggestions as to food for children. Manager to do banking and marketing and get prices from different stores.

III. Class room reports and discussions of home work.

Recipes classified, discussed, compared, selected by class. Newspaper articles read, discussed, and verified by reference work. Replies from schools read and discussed. Posters criticized from standpoint of whether or not they really have a message. Suggestions from children reported and class decides what to provide. Manager reports funds, and class decides what to do. Manager also reports best places to buy.

IV. Home project—The planning and marketing for all the meals for one week and the preparation of the suppers and all the meals on Saturday and Sunday, having guests for at least one meal. This could arise from the girls interest in her dietetic study, and her desire to improve her family's food habits and to show them what she has learned. Mother's interest secured by visiting the home and inviting her to school to see class at work.

A. Aims—To develop girl's ability to take entire charge of her family's food problem, excepting food for the sick. To develop responsibility, managing ability, marketing ability. To improve the family dietary. To develop the idea of hospitality.

B. Content of plan from student point of view.

1. What do I wish to accomplish?

(a) Improve my family's dietary. (b) Help my mother. (c) Reduce cost of family food. (d) Prove my ability.

2. What must I know?

(a) Family's food habits. (b) Amount to be spent for food. (c) How to prepare the usual foods. (d) Family's food requirements. (e) How to buy. (f) Materials on hand—staple groceries, preserved foods, garden produce, chickens.

3. What must I do?

(a) Plan meals. (b) Plan time for preparation. (c) Market. (d) Prepare and serve meals. (e) Clear away. (f) Keep record of time. (g) Keep record of cost.

4. Where can I get help?

(a) Mother. (b) Teacher. (c) Cookbooks. (d) Reference books. (e) Magazines. (f) Newspapers (g) Store clerks.

5. When will I do the work?

(a) Planning meals—general planning, week in advance, more definite planning, one day ahead. (b) Marketing—as much as possible a week ahead, any daily marketing right after school. (c) Preparation—suppers in afternoon, Saturday and Sunday meals, Saturday morning baking. (d) Accounting and reports—in evening or as soon after marketing as practical.

6. What supervision will I need?
 - (a) Mother to approve meals, especially those she is to use, to approve market order, to help with any difficult dishes. (b) Teacher to help with plans, suggest short cuts.
7. What records must I keep?
 - (a) Family members and what they do. (b) Menus planned. (c) Menus served by me; results. (d) Time used in planning, marketing, preparation, etc. (e) Accounts. (f) My own judgment of my work. (g) Benefit work has been to me.

C. Supervision of work.

1. Original contact. Mother at school during class lesson.
2. Conferences. Individual or individual and group, according to number of children on same project. Time during class set aside each week.
3. Home visits. Before project begins. Once while girl is preparing a meal.
4. Reports. Oral at conferences. Final written.

THE PAPER DRESS FORM

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The paper dress forms which are so generally advocated by extension workers as an excellent aid to the home dressmaker offer an equally valuable suggestion for college classes in elementary or advanced dress-making. The advantages of having a relatively accurate cast of the figure to be clothed, the small expense of manufacture, and the ease with which these light weight forms may be handled far outweigh any temporary discomfort the model experiences while the form is being made, and the slight inaccuracies which may occur in making or from the warping of the paper. In groups of people working together, there are always variations in types of build to such an extent that no one type of costume is suited to all. The difficulty of translating the problems of each of these types to something definite and concrete is greatly reduced

by a study of these casts and experimentation with paper and cloth patterns of various kinds. Pattern modelling can be done on these forms with speed and accuracy, and clothing can be tested for fit and general lines with such satisfaction that it seems altogether reasonable to believe that the time is not far off when every college course in garment construction will include work with these casts.

Various sets of directions¹ for making these paper dress forms have been made available. In general, they have been excellent. Upon working with the problem over an extended time, and experimenting with it as a problem for college classes in dressmaking, a few conclusions have been reached which may be of use to others who are interested in the subject. First, the knitted vest over which the strips are glued should be as thin as possible. Any excess material which may appear under the arm should be cut away after the vest is sewed up to fit the figure. The material cut from the lower part of the sleeves makes the best piecings to fill in the high neck, if the ribs of the knitted fabrics run vertical and the pieces are sewed to the vest before the strips are glued on. If the strips are too wet, the danger of warping is greatly increased.

In starting to apply the strips, place two down the middle of the back and middle of the front about three quarters of an inch apart. The space between these strips should be left intact. When the cast is ready to be removed, the cloth between these strips is easily cut so that the halves can be slipped off; when the parts are put together again, the increase in size of the paper form over that of the individual is just about offset when the edges of these middle strips meet.

In gluing the strips in place, the direction which they take varies with each individual. It proved a good rule to let the strip follow the lines of the figure easily. Starting from the front, a strip may go down and back under the arms and finish at the back of the hips. It is important to have the strips smooth, not too tight, and to arrange them so that the thickness is evenly distributed. When one layer of the strips has been put on, the next layer should be placed in the opposite direction. Strips one inch wide should be lapped one half their width. It is necessary for the model to dress as she usually does, since every line and proportion is reproduced in the cast.

The method of procedure to save time and to avoid undue weariness on the part of the model is most important. One should have plenty

¹The Paper Dress Form, Office of Extension Work, U. S. Department of Agriculture, Washington, Dept. Circular 207.

Woman's Home Companion, October, 1921.

Liberty Paper Co., New York.

of strips cut before the gluing is begun. If the 800 foot rolls of paper are used, strips about the right length can be prepared quickly by using a safety-razor blade to make slanting cuts on opposite sides of the roll. With one person moistening strips and two persons putting them on, a cast can be brought to the point where it may be taken off the figure in about 50 minutes. For some, it has proved much less wearisome to start gluing the strips at the hips, placing the two layers before working on the upper part. The feeling of chill and compression due to having the upper part of the figure encased in the moist, stiff strips is the most disagreeable part of the process, and for that reason it seems best to finish the lower part of the cast before working on the upper. In standing, one shoulder is apt to drop below the level of the other. Before encasing either shoulder, place two or three strips over both shoulders, bringing the strips down well toward the waist.

To finish off the cast after removing from the figure, match up the sides perfectly and glue the parts together while still damp. Cover the thin places with short strips, and bind all cut edges with short pieces laid in vertical lines. This binding diminishes the tendency of the cut edges to turn inward. The remaining two layers for strength and stiffness may then be put on at any time. The final layer is best done with strips about a foot long, since with these it is easy to make the surface smooth.

In using these forms, it has been demonstrated that a very short sleeve is advisable. One should make the cast long enough at the shoulder and sleeve to give a good idea of the thickness and curve of the upper arm, but short enough to avoid interference with the pinning of under arm seams. The group of people observed for the purpose of this paper cut off the sleeve of the cast from the underarm seam to a point about one inch below the edge of the shoulder.

For draping materials on the dress form, a covering of muslin or knitted fabric is helpful, although the many thicknesses of paper withstand a remarkable amount of pinning. For skirts, a cloth or paper lining of the correct silhouette and the correct length shortens the time of fitting and hanging very materially.

The cost of the forms is little. An 800 foot roll of gummed tape costs about 20 cents. Two of these will make a large form. An old knitted vest may be used and the wood for the standard costs about 40 cents. All told, this experiment has been interesting, in point of time saving, and as a stimulus to the better solution of the individual's costuming problems.

EFFECT OF BLEACHING ON TENSILE STRENGTH OF
COTTON FABRICS

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The change in tensile strength shown by the cotton samples under the various bleaching conditions is indicated in tables I to X.

DISCUSSION

In these tables it will be noticed that there is a rise in tensile strength above that of the original sample. This checks the work on yarn at the Manchester School of Technology.

The rise comes, in general, with low strengths of chemic, reaching its maximum at about one chlorometric degree initial strength and dropping back to standard or below at about three and five tenths chlorometric degrees. Bleaching was noticeable at the maximum tensile strength and was complete in strengths below those required to bring breaking strength back to that of the original. This would bear out experimentally O'Neil's statement that bleaching if properly conducted should increase tensile strength.

In attempting to account for the rise in tensile strength various checks were run. First the effect of a three hour water immersion was tried. This was found to have no measurable effect on tensile strength. It was impossible to measure closer than the half pound, so a slight increase in tensile strength due to shrinkage, which might logically exist, was not recorded.

The possibility of the action being one of mercerization due to the $\text{Ca}(\text{OH})_2$ formed by the calcium hypochlorite was tested. Three hour exposure to a saturated solution of $\text{Ca}(\text{OH})_2$ had no effect on tensile strength. This is not surprising in view of the fact that we cannot secure a strongly alkaline solution from $\text{Ca}(\text{OH})_2$ since it is soluble but to the extent of 0.17 grams per 100 cubic centimeters, and forty per cent solutions of alkalies are used in mercerization. The rise in tensile strength seems therefore to be produced by the bleaching action and not by the water or alkali.

When the initial bleach is beyond approximately three and five tenths chlorometric degrees we have a fabric lower in strength than the original.

This is in harmony with the popularly accepted belief that bleaching lowers tensile strength. If bleaching converts cellulose to oxycellulose the amount of conversion should be proportionate to the strength of the bleach.

An investigation was made based on Moore's statement that the depth of color obtained with methylene blue is an indication of the amount of oxycellulose. Samples which had been exposed to the light for three months were weighed accurately and dyed in four per cent methylene blue. The results obtained would show that the amount of oxycellulose is proportionate to the depth of color with methylene blue. The lower grade muslin, sample B, did not seem to show so high a coloration as Sample A, indicating less oxycellulose. The tabulated data shows also that Sample B did not exhibit so much fall of tensile strength after three months light exposure as did the more closely woven fabric. This may be due to the fact that the more open fabric was more thoroughly rinsed, and the effect of the bleach on the fibers was therefore more completely stopped.

TABLE I
Sample A warp. Bleached with bleaching powder

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER SAMPLES WERE IMMERSSED THREE HOURS			CHLORO- METRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chloro- metric degrees	Chemic	Arsenious acid	Chloro- metric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	31.5	31.5
318.3	10	0.16	510.1	10	0.10	0.06	34.0	33.0
255.4	10	0.20	392.3	10	0.13	0.07	34.0	33.5
212.2	10	0.24	340.1	10	0.15	0.09	34.0	33.0
106.5	10	0.48	106.2	10	0.31	0.17	34.0	33.0
62.1	10	0.82	82.1	10	0.62	0.20	33.5	33.0
33.2	10	1.27	54.8	10	0.93	0.34	33.0	32.5
29.6	10	1.72	47.5	10	1.36	0.36	33.0	32.0
24.3	10	2.10	30.1	10	1.70	0.40	33.0	31.5
20.9	10	2.44	25.6	10	2.00	0.44	32.5	31.5
18.4	10	2.76	22.2	10	2.30	0.46	32.0	30.0
16.1	10	3.16	19.6	10	2.60	0.50	32.0	30.0
15.2	10	3.37	17.9	10	2.85	0.52	32.0	30.5
14.3	10	3.56	16.8	10	3.02	0.54	31.5	30.0
13.2	10	3.85	15.6	10	3.26	0.59	31.5	29.5
12.1	10	4.19	14.2	10	3.58	0.61	31.0	28.0
11.7	10	4.34	13.7	10	3.72	0.62	30.0	26.0
11.2	10	4.52	13.3	10	3.81	0.71	29.0	24.0

TABLE II
Sample A weft. Bleached with bleaching powder

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER SAMPLES WERE IMMERSSED THREE HOURS			CHLORO-METRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chloro-metric degrees	Chemic	Arsenious acid	Chloro-metric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	28.0	28.0
637.0	10	0.08	1020.0	10	0.05	0.03	29.5	29.0
425.0	10	0.12	850.0	10	0.06	0.06	30.0	29.5
283.3	10	0.18	463.6	10	0.11	0.07	30.0	29.5
242.8	10	0.21	392.3	10	0.13	0.08	30.0	29.0
188.0	10	0.27	300.0	10	0.17	0.10	30.0	29.0
150.2	10	0.34	231.8	10	0.22	0.12	30.0	28.0
64.5	10	0.79	80.9	10	0.60	0.19	29.0	28.0
39.2	10	1.30	52.5	10	0.97	0.33	29.0	28.0
18.4	10	2.76	22.0	10	2.31	0.45	28.5	27.5
13.0	10	3.91	15.8	10	3.22	0.68	27.5	26.0
10.9	10	4.57	13.2	10	3.86	0.71	26.0	24.0

TABLE III
Sample A warp. Bleached with sodium hypochlorite

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER SAMPLES WERE IMMERSSED THREE HOURS			CHLORO-METRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chloro-metric degrees	Chemic	Arsenious acid	Chloro-metric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	31.5	31.5
348.0	10	0.14	566.6	10	0.09	0.05	34.0	33.5
149.8	10	0.34	212.4	10	0.24	0.10	34.0	33.0
106.7	10	0.48	141.7	10	0.36	0.12	34.0	33.0
48.1	10	1.06	62.3	10	0.82	0.24	33.5	32.5
17.3	10	3.52	17.1	10	2.98	0.54	31.0	30.0
11.6	10	4.36	14.1	10	3.61	0.75	29.5	28.0
10.1	10	5.05	12.1	10	4.19	0.86	27.5	26.0
8.2	10	6.22	9.8	10	5.17	1.05	27.0	25.5

The three month exposure to sunlight was made during the summer and the effect of the strong sunlight was not nearly so great as was expected on the basis of what we know of the effect of sunlight on the strength of fabrics. It is possible that commercially bleached fabrics are not so completely rinsed as were these samples. If material is not thoroughly rinsed after bleaching it becomes very tender, for samples

were bleached with calcium hypochlorite of three and five tenths chlorometric degrees and dried without rinsing. When exposed to sunlight one month they tore as soon as the jaws of the tensile strength machine began to move, no tensile strength being recorded.

TABLE IV

Sample A weft. Bleached with sodium hypochlorite

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER THREE HOUR EXPOSURE OF SAMPLES			CHLOROMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chlorometric degrees	Chemic	Arsenious acid	Chlorometric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	28.0	28.0
318.5	10	0.16	566.2	10	0.09	0.07	30.0	30.0
149.2	10	0.34	242.4	10	0.21	0.13	30.0	29.5
64.3	10	0.79	86.4	10	0.59	0.20	30.0	29.0
33.2	10	1.27	54.7	10	0.93	0.34	29.5	29.0
21.2	10	2.40	26.9	10	1.88	0.52	27.5	27.0
17.3	10	3.52	17.5	10	2.91	0.61	26.5	26.0
10.9	10	4.57	13.6	10	3.85	0.72	25.0	24.5
9.4	10	5.42	12.1	10	4.21	1.21	24.0	24.0

TABLE V

Sample A warp. Bleached with sodium perborate

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER THREE HOUR EXPOSURE OF SAMPLES			OXIMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Sodium thio-sulphate	Oximetric degrees	Chemic	Sodium thio-sulphate	Oximetric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	31.5	31.0
100	2.7	0.089	100	1.5	0.036	0.053	34.0	33.5
100	5.1	0.066	100	2.1	0.049	0.017	34.0	33.5
100	9.8	0.233	100	4.9	0.112	0.121	34.0	33.0
100	15.1	0.359	100	10.7	0.222	0.137	33.5	33.0
100	25.0	0.595	100	16.8	0.401	0.194	33.0	32.0
100	37.0	0.880	100	25.0	0.595	0.285	33.0	32.0
100	54.0	1.287	100	29.0	0.89	0.397	32.5	31.0
100	62.0	1.513	100	43.7	1.04	0.473	32.0	30.5
100	76.9	1.83	100	50.8	1.21	0.62	31.0	30.0
100	117.6	2.80	100	83.2	1.98	0.82	31.0	29.5

The low and average strength of sodium perborate give a rise in tensile strength comparable to that obtained from equivalent strengths of the calcium and sodium hypochlorites. The higher strengths of sodium perborate do not affect the strength of the sample so much as do equivalent strengths of calcium and sodium hypochlorite. Starek claims that

perborate does not affect tensile strength, but this statement was not entirely borne out. It does seem, however, that, either because of its solubility which renders it possible to remove it completely in rinsing, or because the oxygen alone does not so readily form oxycellulose as does the chlorine, sodium perborate does not cause so great a loss in tensile strength as does calcium or sodium hypochlorite.

TABLE VI
Sample A welf. Bleached with sodium perborate

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER THREE HOUR EXPOSURE OF SAMPLES			OXIMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Perborate	Sodium thio-sulphate	Oximetric degrees	Perborate	Sodium thio-sulphate	Oximetric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	28.0	28.0
100	2.1	0.049	100	1.07	0.022	0.027	30.0	29.5
100	5.1	0.131	100	2.24	0.054	0.077	30.0	29.5
100	8.3	0.198	100	3.61	0.086	0.112	30.0	29.0
100	15.1	0.359	100	9.8	0.233	0.126	29.5	29.0
100	20.0	0.480	100	14.3	0.331	0.149	29.0	27.5
100	32.7	0.78	100	20.8	0.496	0.284	28.5	27.0
100	38.2	0.91	100	25.2	0.601	0.309	28.0	27.0
100	63.8	1.50	100	42.5	1.01	0.49	28.0	27.0
100	109.5	2.61	100	73.9	1.76	0.85	27.5	27.0

TABLE VII
Sample B warp. Bleached with bleaching powder

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER SAMPLES WERE IMMERSSED THREE HOURS			CHLORO-METRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chloro-metric degrees	Chemic	Arsenious acid	Chloro-metric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	24.0	24.0
636.9	10	0.08	801.9	10	0.05	0.03	26.0	26.0
283.6	10	0.18	424.8	10	0.12	0.06	26.0	26.0
187.8	10	0.27	366.4	10	0.14	0.13	26.0	25.5
106.3	10	0.48	170.2	10	0.30	0.18	25.5	25.0
64.4	10	0.79	96.2	10	0.53	0.26	24.0	24.0
33.2	10	1.27	57.9	10	0.88	0.39	23.0	22.5
25.8	10	1.98	33.1	10	1.54	0.44	22.0	22.0
18.2	10	2.75	22.5	10	2.26	0.49	22.0	21.0
13.9	10	3.64	16.7	10	3.03	0.61	21.0	21.0
10.4	10	4.90	12.5	10	4.08	0.82	19.0	18.0

TABLE VIII
Sample B weft. Bleached with bleaching powder

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER SAMPLES WERE IMMERSSED THREE HOURS			CHLOROMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Chemic	Arsenious acid	Chloro-metric degrees	Chemic	Arsenious acid	Chloro-metric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	21.0	21.0
463.4	10	0.11	849.9	10	0.06	0.05	23.0	22.5
283.5	10	0.18	510.0	10	0.10	0.08	23.0	22.0
94.6	10	0.54	134.2	10	0.38	0.16	22.5	22.0
61.9	10	0.82	85.0	10	0.60	0.22	22.0	22.0
29.7	10	1.72	39.3	10	1.30	0.42	21.0	21.0
20.8	10	2.44	26.1	10	1.92	0.52	19.0	18.5
14.2	10	3.58	17.2	10	2.97	0.61	17.0	16.5
9.8	10	4.21	12.1	10	4.19	1.02	15.0	14.0

TABLE IX
Sample B warp. Bleached with sodium perborate

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER THREE HOUR EXPOSURE OF SAMPLES			OXIMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Perborate	Sodium thio-sulphate	Oximetric degrees	Perborate	Sodium thio-sulphate	Oximetric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	24.0	24.0
100	3.7	0.098	100	2.5	0.059	0.039	26.0	26.0
100	5.4	0.128	100	2.8	0.067	0.061	26.5	25.5
100	10.7	0.222	100	4.8	0.114	0.108	25.5	25.0
100	20.8	0.496	100	10.2	0.245	0.251	24.0	23.5
100	38.2	0.910	100	23.5	0.561	0.349	23.0	23.0
100	79.4	1.89	100	52.1	1.26	0.63	22.0	21.0

TABLE X
Sample B weft. Bleached with sodium perborate

INITIAL STRENGTH OF BLEACH			STRENGTH OF BLEACH AFTER THREE HOUR EXPOSURE OF SAMPLES			OXIMETRIC DEGREES ABSORBED	TENSILE STRENGTH	
Perborate	Sodium thio-sulphate	Oximetric degrees	Perborate	Sodium thio-sulphate	Oximetric degrees		Just after bleaching	After three months exposure to light
cc.	cc.		cc.	cc.				
0	0	0	0	0	0	0	21.0	21.0
100	2.5	0.059	100	1.1	0.026	0.033	23.0	23.0
100	3.8	0.091	100	2.1	0.049	0.042	23.0	22.5
100	7.9	0.189	100	3.7	0.088	0.101	22.5	22.0
100	15.1	0.359	100	6.3	0.150	0.209	22.0	22.0
100	54.0	1.28	100	32.7	0.78	0.50	21.0	20.0
100	98.0	2.32	100	62.1	1.47	0.85	20.0	19.5

CONCLUSION

In view of the results obtained it seems that the effect of bleaching on tensile strength is to increase that strength when a low or average strength bleaching solution is used, but to cause a fall in tensile strength with high strengths of bleach or when the bleaching solution is allowed to act on the fiber for a long time, as in the case of the unrinsed fabric.

Since the checks run with water alone and with the saturated solution of calcium hydroxide did not measurably affect the tensile strength, it would seem that the change of tensile strength is due to the action of the bleach itself.

In the presence of sunlight the tensile strength usually falls, the fall being less in the loosely woven sample. The amount of oxycellulose, as indicated by the depth of color in the tests with methylene blue, is also less in the runs on Sample B. This would indicate that where there is bleaching solution left on the fabric there is a continued formation of oxycellulose and a consequent loss in tensile strength.

The action of the bleach on cellulose is conceded to be the formation of oxycellulose. The chemical and physical properties of this compound are not well known but it is possible that the oxycellulose may form a more or less gelatinous layer on the surface of the fiber. Leo Pingal (13), Director of the Public Testing Bureau for Textile Industry, Aachen, Germany, in his tests on the hygroscopic qualities of bleached and unbleached cotton, found bleached cotton to be less hygroscopic than unbleached. This was unexpected, in so much as by bleaching we remove the wax, fatty acids, coloring matter, pectin and albuminous matter, but was explained when it was discovered that the microscope showed a gelatinous coating over the fibers. This coating is very clearly shown by the micrographs accompanying the article.

This coating, probably oxycellulose, might logically explain the rise in tensile strength, for the gelatinous coat would probably prevent the fibers from tearing apart so easily. If, however, the conversion of the cellulose to oxycellulose were so complete as to affect the major portion of the fiber, the tensile strength would fall. This was the effect noticed when higher strengths of bleach were used.

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(Concluded)

HOME ECONOMICS AND INTERNATIONAL RELATIONS

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Fundamentally home economics is international. Everywhere it is the man, the woman, and the children who form the family group, and everywhere is the need for solving the many detailed problems of providing shelter, food, and clothing, and creating a happy family life.

This was very noticeable at the Third International Congress on Home Economics held in Paris at the beautiful Hotel de La Rochefoucauld, April 18-22, 1922. On the International Committee were representatives of many countries. M. Du Prey, formerly French Minister of Agriculture, was President of the Congress, and the other members of the French Committee were important government officials and representatives of various schools and professional groups in France. Delegates were present from thirty-three countries including most of the older and newer countries of Europe, Japan, China, Cuba, Mexico, and the Argentine Republic.

Under the present law, the United States can not participate in any international gathering without special authorization from Congress, and consequently there could be no official representation from this country at Paris. However, the American flag flew in the courtyard after the second day. Many people saw the publications sent from our Department of Agriculture and Bureau of Education, and I had the opportunity of speaking for a few minutes on the home economics work in our country. At the final meeting, at the Hotel de Ville, special thanks were given to America for its assistance and there was much applause, so that our representation, although limited, had perhaps considerable value in promoting better international relationships.

At the first session of the Congress there were greetings from various officials. A summary of home economics work in different countries before, during, and after the war, was presented by M. Dausset, former president of the Municipal Council in Paris and now Senator from the Seine.

The sessions of one day were used for a discussion of home economics in urban schools. With the exception of a woman inspector of home economics from Belgium, the speakers were deputies from various sections in France.

Home economics in the rural districts was the topic on the second day. M. Van Der Vaeren, General Inspector of Agriculture in Belgium, spoke on the work in the primary and secondary schools. French officials discussed extension work and the work in the normal schools of agriculture.

The subject on the third day was home economics in relation to science and to social life. The addresses included a general paper on professional education, a practical one on training for domestic service by Mme. Bonnabry of the Professional School at Fribourg, an excellent presentation of the relationship between science and home economics by Dr. de la Riviere of Pasteur Institute, and a paper on the value of home economics in improving home conditions and thus economic and social conditions.¹

In addition to the papers announced on the program, innumerable communications were received. This meant that many different topics were presented in a short time and there was little opportunity for reaching any constructive conclusion. Competition among different countries for national recognition, often bringing this rather than home economics into ascendancy, made me thankful that sectional jealousies are of so little importance in our American conferences.

A number of the delegates had visited the United States, and told me how much they had profited by what they had seen. Reports came from France, Belgium, Czecho-Slovakia, Poland, Holland, Norway, and Cuba.

In turn, I was struck by the extent to which we had been influenced by Europe in our earlier work and the distance we have gone from it in our more recent work. From various countries came exhibitions of sewing models exactly like those over which I had struggled in my normal training. I remember one which showed the different ways of making fastenings and which had many buttons and buttonholes and hooks and eyes and loops and eyelets arranged in a most useless but orderly way. There were models of hems and tucks and seams arranged in the little books for the first year's course, and the elaborate patching and darning and embroidery in the books for the second year's course. Apparently only in the more advanced work came the actual construction of garments, and there was little evidence of the inclusion of the rich thought

¹ Copies of the proceedings will be available later from the International Office at Fribourg by payment of a small fee.

content which we are recognizing as an important part of such educational work. The same was true of cookery. The emphasis was placed on the gaining of technique, as was the case in the instruction in laundry and housewifery, in which much more time is spent than is customary with us. Instruction is also given in child care but chiefly from the standpoint of the mother's care of a child.

Home economics is required in most countries for the girls in the elementary schools. In the household schools, for the older girls, practically full time is given to the study of home economics, much of it being spent in laboratory work. There is excellent work for the women and girls in industry. The training of teachers is given in special schools usually with a course of only one or two years. The course at King's College, London, is the only one in Great Britain leading to a college degree, but there is interest elsewhere in Great Britain in having the work at certain technical schools recognized by the universities and counted towards a degree. I heard no mention of such interest in the reports from the continent, although there was discussion of the necessity for better professional training of teachers.

Home economics work in Europe, however, has achieved recognition which as yet I think we have not achieved in America. Important government officials in many countries were active participants as speakers or delegates. In France, as I was told over and over again, it is the women of the best families who are interested in the home economics work, for they see the importance of having the daughters well trained to manage every detail of their future homes. This training for home making is everywhere the guiding principle in home economics work, and it is apparently well organized to meet this particular need in the various countries. "*L'element vital d'un peuple est au Foyer, et c'est la Femme qui fait ou defait le Foyer*," was a statement made over and over again. We hear this, too, in America, but I think I have never heard it stated so vigorously, nor with so much emphasis placed on the influence of home economics in lessening a grave national danger.

In conclusion I should like to make certain suggestions with reference to participation by the Association in any future international conference.

1. If possible, in addition to representation on the International Committee, have an American, resident in the country where the conference is to be held, made a member of the committee on arrangements. This will be especially necessary if the ruling is still in force in the United States against any official participation in international conferences, as

there seems little conception over here of representation except officially.

2. Have as large a delegation as possible, with at least one member who can understand and speak the official language of the conference.

3. Have a well organized exhibit showing in detail the various types of home economics work. Have explanatory notes in French as well as in English. If possible, have a small leaflet for distribution at the Congress, giving a brief description of work being done in various places, and detailed information about sources of help for those who wish to write and for those who plan to visit the United States.

4. Formulate proposals to be introduced at the Congress, which will assist in making American standards influential in promoting home economics throughout the world. Each country has to work out the details of subject matter and method of organization, but the fundamental ideals are the same. At the next International Conference, I am hoping that much more may be accomplished in bringing our work into closer relationship with what is being done elsewhere.

This year I have been studying most of the time in England, but I have been also in Holland, Germany, Austria, Italy, Switzerland, and France, and have attended several international conferences in London as well as this one in Paris. Everywhere there has been the greatest curiosity about America, especially about home life in America and about our educational methods. America is not always liked over here, but it has suddenly become a powerful, although unknown, influence. For this reason it seems most important that our home economics workers keep closely in touch with those in other countries so that we can exert a real influence in helping them to understand the high standards in family life for which we are aiming, and the way in which we are relating our work to various types of educational and social effort. At the same time there is much which we can learn from other countries with longer experience in establishing high standards of home life adopted to local conditions, and in organizing effective educational effort.

EDITORIAL

The American Academy of Political and Social Science. The American Home Economics Association was one of a large number of organizations in educational, industrial, political, and economic fields, requested to send delegates to the annual meeting of the American Academy of Political and Social Science in Philadelphia, May 12-13. The program was a development of various phases of the general topic, America's Relation to the European Situation. Official representatives from many European nations, financiers, writers, industrial leaders, legislators, labor leaders, experts on tariff and commerce commissions, and women from England, France, and Germany, representing international organizations, discussed from their respective points of view the indispensability of American coöperation in the financial, industrial, and political rehabilitation of Europe.

Not only does Europe need America, but these speakers believe that American prosperity is dependent upon European rehabilitation; thus our own standards of living are affected by conditions determining standards of living in Europe. Practically all articles used in everyday life are dependent on some imported material for their production, and economic conditions seemingly remote are reflected in our own life. For instance, the collapse of Russia has destroyed the largest market for Chinese tea and silks; China was one of the largest markets for cotton goods spun in Manchester, England, and, as a result of China's present inability to purchase these goods, over 60 per cent of the spinners in Manchester are unemployed and the standard of living has been lowered to a striking degree; Manchester was one of the great markets for American cotton, and the decline of this market affects the income and standard of living of all persons in this country concerned with the production of cotton. Numerous similar illustrations could be given. International trade, European debts, loans, industrial and political situations are subjects of vital interest, not alone to financiers, politicians, and economists, but to all women who are working for the improvement of the American home and the betterment of living conditions.

Qualifications of a Home Economics Teacher. In a paper recently presented at a conference of home economics teachers at Lexington, Kentucky, Miss Maybelle Cornell, head of the Department of Home Economics, University of Kentucky, sets a high standard of training

and personal qualification for the woman who would teach home economics. Her training should be divided into four groups: cultural-scientific, technical, and educational. To thorough, balanced development in these lines she must add adaptability, attractive personality, understanding of home problems, and interest in her work and her students. Above all, she must relate her work with the individual to the welfare of the community; she must have a social point of view. Miss Cornell says, "To be a successful teacher of home economics in the secondary schools she must believe in her work as a fundamental need of mankind, as a source of good to the community. This should not be demonstrated through spectacular dinners for different organizations, as these have very little educational value. The teacher should show her work through the improved physical condition of her students and their wholesome mental attitude, through the spirit of the school, and through the improved conditions of the community."

Standards for Work in the Elementary Schools. The latest contribution to the work of setting standards for home economics in elementary schools is made by the Department of Household Arts Education of Teachers College, Columbia University. "Home Economics Information Tests" for girls completing the eighth grade have been prepared by groups of graduate students. This extensive piece of work, carried on over a period of two years, has been given a preliminary test in five different types of classes in New York City.

There are three sets of tests dealing with food, clothing, and other problems of the home, respectively. The various tests in each set have different values of importance, and arrangements for scoring have been simplified. By checking the scores, teachers will see which parts of their teaching have functioned.

Copies of this excellent work may be secured through the Bureau of Publications, Teachers College, and are available for home economics teachers who wish to give these tests to girls completing the eighth grade.

Pirquet's Nutritional Index. Pirquet's strange sounding vocabulary expresses facts which are not new in themselves but which are viewed all the more critically for having been approached in this new fashion; the situation which caused Pirquet to coin the words, *pelidisi*, *sacratama*, *nem*, et cetera, was different from the situation now confronting us in America. After the war, there was an immediate necessity for wholesale feeding in order to save the young life of Austria. Thou-

sands of hungry and undernourished children had to be fed from public kitchens, and a sound and scientific administration necessitated an answer to these two important questions: by what standard should the child be judged underweight and in need of food from the public kitchen; and how much food does he need daily to be brought back to a normal state of nutrition? Pirquet answered the first question by the pelidisi and the second in terms of nems.

The pelidisi is the nutritional index and shows the relationship between weight and the sitting height which Pirquet believes to be a more accurate basis of comparison than standing height. In the normal individual,

$$\sqrt[3]{\frac{10 \times \text{weight (in grams)}}{\text{sitting height (in centimeters)}}} = 100 \text{ per cent.}$$
 Deviations from this normal value indicate the state of nutrition; for example, the thinner the person of a given sitting height, the lower will be the percentage of nutrition or the pelidisi. Pelidisi aims to tell the same story as Wood's height-weight scales even though it is based upon sitting height and is expressed in percentages. Pirquet finds that any child with a pelidisi below 95 per cent is sufficiently underweight to need attention. Another word which he uses to describe the conditions found by physical examination is *sacratama*, also coined by assembling the first letter or syllable of the words of a descriptive phrase. A normal pelidisi almost invariably accompanies a normal *sacratama*, as would be expected. Reviews of Pirquet's clinics can be read in the medical journals of this country.^{1,2}

The nem is the fuel value of one gram of milk; the nem value of other foods is nothing more or less than a ratio of the calorie value of one gram of the food to that of one gram of milk. His reason for adopting such a word is that the meaning of nem can be explained to the layman in an understandable manner, whereas it is difficult for anyone except the physicist to grasp the meaning of the calorie. Pirquet's method of arriving at the optimum amount of the daily feedings by calculating the absorption capacity of the child for his sitting height in centimeters seems too hypothetical for a very serious consideration.

Pirquet's nutritional index, applied to American children and to the measurements for young men accepted by the United States Army, shows a pelidisi of only about 94 to 95 per cent, a value which Pirquet

¹ Faber, H. K., *Amer. Jour. Dis. Child.*, 1920, 19: 478.

² Carter, W. E., *Jour. Amer. Med. Assn.*, 1921, 77: 1541.

considers as indicative of marked undernutrition.³ Faber,⁴ has compared the pelidisi of a group of American children with the nutrition rating on the Wood scale for the same group and finds that only about one-fourth showed comparable indices by the two methods and "in many cases the divergences were so great as to be absurd." The Wood scales are admittedly faulty, but the critics of Pirquet's index doubt the remedial effects of a change to a standard which is based largely upon theoretical assumptions rather than on direct observations of thousands of cases as the Wood scales are known to be. There is the possibility, suggested by some of its more lenient critics, of so changing the factor in the ratio of weight to sitting height that there can be made some such pelidisi chart of reasonable accuracy for American conditions which can be adapted to use in the rapid examination of large groups of children.

SYBIL WOODRUFF.

OPEN FORUM

A College Demonstration. The invitation of the Multnomah Hotel manager of Portland, Oregon, to the School of Home Economics of the Oregon State Agricultural College to cook and serve a dinner to the guests of the hotel, came at the end of the senior excursion to Portland to visit factories, packing plants, bakeries, and other establishments, and served as a challenge to 35 young women of that division.

The railroad tickets of the young women were furnished to them by the college and they and the faculty advisors who accompanied them were guests of the hotel management while in Portland, where they spent one day and two nights.

At no time did the hotel management seem to doubt the ability of these young women to carry out this undertaking successfully, but the public and the press, as shown by the interviews of the reporters, had misgivings as to whether college women could measure up to experienced hotel chefs. And there were those who wandered through the hotel kitchen in the afternoon to see if the chef really was not doing the cooking and the girls receiving the credit. These misgivings, however, were dispelled by those who observed and partook of the dinner, which was unanimously pronounced by them and the press as a most successful undertaking. "This is the best meal I have had in the hotel in the three years I have lived here" was one of the many interesting remarks overheard.

³ Barden, C. R., (Communication), *Jour. Amer. Med. Assn.*, 1921, 77: 1988.

⁴ Faber, H. K., (Communication), *Jour. Amer. Med. Assn.*, 1921, 77: 1837.

The following menu was planned by the hotel management and prepared by twelve of the senior women who had taken one or more institutional management courses in the college.

MENU		
Ripe Olives	Green Olives	Salted Nuts
	Canape Multnomah	
	Merry Widow Cocktail	
	Cream of Asparagus Soup	
	Tenderloin of sole, Tartar sauce	
	Roast Chicken, Special Dressing	
Fresh Asparagus		New Potatoes
	Lettuce and Tomato Salad	
	French Dressing	
	O. A. C. Parfait	
Kisses		Macaroons
	Coffee	

Four of these young women prepared and roasted the 90 chickens, cooked the fish, made the soup and the cakes, and prepared the vegetables; four made the cocktails, canapes, and sauce; four, the salads, parfaits, and relishes. The remaining 23 of the 35 students, after observing the hotel service during their breakfast and luncheon, were prepared to serve the dinner in the Gold Room of the hotel, which was beautifully decorated in orange and black, the college colors, and which accommodated 250 guests at one time. All the students were dressed in their simple white uniforms and low flat-heeled white shoes. Their simplicity as well as their efficiency made a marked impression on the public as evidenced by the remarks of hotel guests and the front space in the Portland papers, given to numerous articles and pictures of the students in the kitchen at work. The greater part of the morning was spent in posing for a moving picture concern and all of the newspaper photographers.

The announcement of the plan and later the success of the undertaking appeared in the Associated Press. The unanimous opinion of the students participating and the division of the college represented is that this experience has been most valuable and delightful, for it helped to demonstrate to the public that college women can put theory into prac-

tice and that trained minds can meet and solve new problems intelligently and efficiently.

The heartiest coöperation was received from the hotel manager, chef, and all of the employees. So pleased were they with the outcome of this experiment that they invited the School of Home Economics to make it an annual affair, serving luncheon in the Gold Room and dinner in the Arcadian Gardens, thereby increasing the number of guests served and enabling a larger percentage of the 90 senior home economics women of the college to have this invaluable experience.

AVA B. MILAM,
*Dean, School of Home Economics,
Oregon Agricultural College*

Practice Work in Institution Courses (continued). The present arrangement for practical work at Cornell is as follows:

Institution Practice. Girls are placed in every position of the service side to gain practical knowledge of all counter service, supply room work, cashing, checking; they have a week of office work.

Cookery and Marketing. Students cook in large quantities for actual cafeteria use. This work is given with the intent of training future managers so that they may be able to step in at critical times and prepare food, and to give them a basis for figuring elements of fatigue and time as regards their employees. The marketing side of the course is a discussion of methods of purchase in large quantities, and of the forms and sizes in which we purchase.

Institution Management. We discuss forms of organization, labor problems as applied to our work, planning and equipment of institutions.

We need a course in which the girls, one or two at a time, could spend a few days a week with us and actually direct work and help with ordering, and managing. Their other courses make this almost impossible at the present time. If, in time, there could be worked out a scheme of affiliation between schools and an exchange of students, it would be a good thing.

LOIS FARMER,
Cornell University.

BOOKS AND LITERATURE

Nutrition and Growth in Children. By WILLIAM R. P. EMERSON, M.D. New York: D. Appleton and Co., 1922, pp. 342 \$2.50.

It is fitting that Dr. Emerson who is generally recognized as a pioneer in the nutrition class movement, should be the first to publish a book on this subject. This book will be welcomed by all who have attempted to follow Dr. Emerson's work during the last decade through his articles in medical journals and other publications; but it will be particularly useful to the pediatricist and to the nutrition specialist both of whom are directly concerned in the problems which the book presents.

The book consists of three sections. In the first, Diagnosis of Malnutrition, the methods of identifying the malnourished child are described. Throughout the book underweight and malnutrition are used as practically synonymous terms; hence standards of height and weight are here considered, and the method of applying them in the classification of children as malnourished, borderline, ideal, and overweight is described. It is clear from the text and from a chart which accompanies it, that Dr. Emerson identifies the malnourished child by the weight-height test; then determines the causes by three examinations which he terms the mental examination, the physical-growth examination, and the social examination, the latter including diet, health habits, and all significant home and school conditions. Section two, Malnutrition and the Home, deals with the factors of home control, over-fatigue, exercise, measured feeding, diet, health habits, overweight, the special problems of the pre-school child; in addition it answers some twenty of the most common questions asked by parents. In section three, A Nutrition Program for a Community, Dr. Emerson's nutrition class method is described, and the duties and qualifications of the physician and nutrition worker are outlined, a typical session of one of his classes is pictured, and

a nutrition program for a school, for an institution, for a children's camp, and for a whole community are presented. The appendix contains standards of height and weight, medical examination records, and copies of various blanks and devices used in his classes.

In short the book is a fairly detailed description of Dr. Emerson's work on the malnutrition problem, his theories, his methods of procedure, and the results which have been accomplished thereby.

Possibly the weakest point in the book is the tone of finality which it conveys concerning certain problems which are considered by good authorities as far from being definitely settled. Weight, for example, is made to appear a more accurate measure of nutrition than many specialists are willing to admit it to be. That weight is one measure of nutrition no one could doubt, but what per cent deviation is most applicable to the different age groups, and what other standards for judging it should be applied, are felt by many to be subjects for further investigation.

Other weaknesses seem to the writer to lie in the sections dealing with food. It is to be regretted that Dr. Emerson has put the emphasis so largely on calories and has felt it necessary to "offer a word of caution against the excessive use of fruits and vegetables in the effort to supply vitamins in the child's diet" in the fear that these bulky foods will crowd out the ones of higher caloric value. Although Dr. Emerson has "never known a case of malnutrition (determined by weight) that could properly be diagnosed as a 'lack of vitamins,'" it has nevertheless been demonstrated that serious disturbances of nutrition, not necessarily accompanied by underweight, may and do occur when the supply of vitamins is low for any considerable time. Fruits and vegetables, which are liberal sources of these vitamins as well as of important minerals, have been shown in extensive studies of children's diets to be far less

generally used by children than is certainly desirable. It would seem that the word of caution is more needed against the danger of an under rather than an over use of these important foods.

The impression of exactness given in the calorie discussions and estimates seems also quite misleading. Even experienced dietitians can only roughly approximate the caloric value of a diet when actually observing it; when, therefore, the values of diets are computed from lists of foods eaten at home, the results are obviously far from reliable.

A similar criticism might justly be made of the air of scientific accuracy with which a specific cause is assigned for each small rise or fall in the weight line.

That fast eating, reading in bed, sleeping with windows closed, playing during the rest period, may all contribute to loss in weight cannot be doubted, but the impression that one can dogmatically assign any one of these as a cause in a particular case as definitely as a biochemist can account for a similar drop in the weight of his animals should never be conveyed. Dr. Emerson, of course, realizes this and we believe his data would be in less danger of misinterpretation in this regard had he made this distinction clear in the discussion.

Turning to the many commendable features of the book—the emphasis on the medical aspect of nutrition work, the importance of attention to nasopharyngeal obstructions, the need for careful study of every individual case, the value of milk in the diet and the necessity of good food habits, and particularly the insistence throughout on the responsibility of the parents in any program of cure, will all be appreciated by other workers in this field. The description which pictures the undisciplined, haphazard existence led by many children as “an almost unbroken series of dissipations” will be recognized as a correct one; and the pressure brought to bear on parents to take the matter firmly in their own hands will be heartily endorsed. The discussions of exercise, recreation, over-fatigue, fresh air, sleep, the care of the

pre-school child, and other items of general care are also ones which might be read with advantage by parents and others having to do with the training of children.

LYDIA ROBERTS,
University of Chicago.

Obstetrical Nursing. A text book on the nursing care of the expectant mother, the woman in labor, the young mother and her baby. By CAROLYN VAN BLARCOM, R.N. New York: The Macmillan Company, 1922, pp. 582. \$3.00.

This book, written as a text book for nurses, serves first the need for an adequate text book in obstetrical nursing. There is, of course, much of nursing technique that will be of interest only to nurses, but the clear, simple explanation of the normal development of the coming baby, his birth and care, and the suggestions for understanding help for his mother will contribute much toward a realization of the need for adequate maternity care which must be understood by social and welfare workers as well as the general public before we can hope to reduce to its minimum our needlessly high maternity and infant death rate.

Social and welfare workers whose work brings them in contact with mothers and babies will find in this book an explanation for some of the difficulties which prove so puzzling in their work.

ANNE A. STEVENS,
*National Organization for
Public Health Nursing.*

Everyday Manners for American Boys and Girls. By the Faculty of South Philadelphia High School for Girls. New York: The Macmillan Company, 1922, pp. 115.

This little book, we are told, grew out of a real need. “When we began by letting them discuss what to do at a dance we could not have stopped had we wished to do so. A committee was formed and a manual of manners compiled. The evolution of the book is a logical and normal story of supply and demand.” A book that came together in this way, through the coöperation of editors and readers to meet a real situation,

could hardly help being a live book. Compared with it the "books of etiquette" are dull and formal.

The different topics are treated under Home, School, and Business Manners, and we have such chapter headings as Having a Guest, Being a Guest, Gifts, At the Telephone, In Trolley Cars, In Stores and Places of Amusement, besides topics that every such book must contain, as Table Manners, Dress, Introductions, Entertainment.

All suggestions are made with authority but often with the explanation of the custom. Some are given with a minutiae which would not be found in books written for older people, but which older people might welcome. The humorous side headings keep the smile going, as "It is only babies that need spoons for all their food." "Don't suck your spoonful of ice cream, eat it." "Of course you never leave *your* things about." "Do you glitter like a jewelry counter?"

An excellent feature to be found at the end of every chapter is "Problems: Who will solve them?"

The charming silhouette illustrations by Ethel C. Taylor are in keeping with the humor and gayety that pervade the book and insure that it will not lack for readers.

MARY HINMAN ABEL.

Elementary Industrial Arts. LEON LOYAL WINSLOW. New York: The Macmillan Company, 1922, pp. 335. \$1.20.

This book in its twelve chapters discusses twelve industries, approaching them from the historical point of view, proceeding to present day accomplishments on a large scale, and pausing in detailed directions for actual practice on a small scale. Each chapter is well illustrated and ends with a useful bibliography.

The book is intended for upper elementary grades and is of interest, not only because of its instruction in manipulation, but because of its educational method. "It attempts to combine the related drawing and art with construction and this drawing and construction with an industrial subject matter."

The author believes that, "as regards elementary education, we may truthfully say that construction should not exist for mere construction's sake. . . . Manual work must be made valuable by being made significant. The manipulation of materials whether concerned with representation, with design, or with construction, in most instances should be undertaken for the purpose of clarifying ideas regarding subject matter directly related to the industries."

Practical Business Arithmetic. BY HELEN J. KIGGEN. New York: The Macmillan Company, 1922, pp. 404.

While this book is primarily intended to meet business needs, there are many parts, and even whole chapters that deal with home economics mathematics. For example, the chapter on "Thrift" includes personal and household budgets; "Units of Measure" deals with dress goods, carpeting, water, gas, and other household utilities; and "Mathematics of the Trades" gives practical problems in millinery, dressmaking, and food problems.

As stated in the preface, "the author has not only endeavored to develop arithmetical skill, but, through the selection and solution of the problems given, has tried to instill in the minds of the pupils the character-making quality of individual responsibility in money matters, which is an outgrowth of the practice of thrift, and to show the loss resulting from waste, to the individual, to the community, and to the nation."

How to Get on Two Pay Rolls. BY E. A. HUNGERFORD. Indianapolis: Bobbs-Merrill Co., 1921, pp. 64. \$1.00.

The subtitle, "A Manual of Personal and Family Finance," explains to some extent the means of getting on two pay rolls.

The book has spaces for an inventory showing assets and liabilities, for bills payable and receivable, for accounts for one year; and in addition it contains a form for scoring by a point system the children's performance of their various tasks.

The introduction contains a fourteen point financial creed and also fifty-seven budget suggestions, the latter, however, are suggestions for general thrift rather than budgeting.

The book is suggestive and helpful, but unfortunately the space for making entries is so cramped that it would be difficult to keep it in good shape.

SARAH J. MACLEOD.

Quantities to Serve 50 Persons is a set of mimeographed recipes compiled from the central kitchen of the Halls and Commons of the University of Wisconsin under the direction of Mabel C. Little. This set will be loaned from the JOURNAL Office on receipt of 10 cents.

Nutrition. The attention of nutrition workers is called to two pamphlets of the New York Nutrition Council—*Height and Weight as an Index of Nutrition*, prepared by the Committee on Statistics, and *Good Nutrition and Adequate Food Allowances for the Family*, prepared by the Committee on Economic Standards. These pamphlets are discussed in the report of the Nutrition Council in the news section of this issue. Both may be secured from the A. I. C. P., 105 East 22nd St., New York City, at twenty-five cents a copy.

The Child and the Home. Home Economics teachers who attended the Alumni conferences at Teachers College in February were greatly interested in an address by Professor Hugh Hartshorne of Union Theological Seminary on "The Child and the Home" in which he outlined the significance of the coöperative training of the child in simple household tasks as giving a basis for the socialized life of the home and also for the religious experience of the child in a family group and for wider social relationships. Professor Hartshorne has developed these ideas in his book "Childhood and Character" (Pilgrim Press). In his address he also referred to Edith Mumford's book "The Dawn of Character" with its chapter on "The Dawn of Religious Consciousness."

A Suggested Outline of Study, based on Mrs. Mary Hinman Abel's "Successful Family Life on the Moderate Income," has just been issued by J. B. Lippincott Company, Philadelphia, and will be sent on request to teachers interested. While written particularly for use in extension teaching and other group study by adults, the material will prove valuable to those who are using Mrs. Abel's book as a text in home economics courses. The outline presents eight different subjects, including the moderate income family, and sources of family income.

Mercure de France. It is a pleasure to find in the literary notices of the *Mercure de France* that two practical gastronomes, Mm. Curnonsky and Marcel Rouff, are studying methodically all the old French provinces from the culinary point of view. They are also collecting local cooking recipes and all legends and anecdotes of choice, refined food and drink.

In spite of all the troubles left by the war, the fine French tradition of enlightened cookery is maintained. M. Bertrand Guegan has published two fat volumes of "The Flower of French Cuisine," an anthology of choice and master recipes and all the most delicate and exquisite forms of kitchen artistry. Moreover, in his "Almanacs of Cockaigne" he has let some of his collaborators, "inspired by culinary cubism," amuse themselves to the top of their bent and has reprinted little masterpieces like Mallarmé's "Three Creole Receipts," "Orange Carp" from the Chinese, his own essay on "Mastication," little works of Brillat-Savarin, chief of all table-lords, and so on. With what art and taste the French amateurs practice their great profession! They are always gourmets, not gourmands; albeit, one thinks not unkindly of that great ecclesiastic, whoever he was, who said that "even gluttony is only a proper appreciation of the benefits of the Creator."

Georges Vicaire, who died the other day, was a distinguished bibliophile as well as gourmet. He was the author of a "Gastromonomical Bibliography."—*Extract from editorial in the New York Times.*

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NEWS FROM THE FIELD

Subscription Contest. THE JOURNAL wishes to express its appreciation of the contest in student subscriptions that has been conducted in the various institutions during the spring term, bringing in a total of 557. The figures below show the tangible results for all who passed the "five" mark, between April 1 and July 11. It will be evident that these figures do not represent the true score, as some schools sent in their subscriptions before April, and some schools sent in 100% for the senior class even though their total is far below the record for larger institutions.

Carnegie Institute Tech.	8
College Ind. Arts, Denton, Texas.	11
Cornell University.	7
Framingham Normal.	2
Indiana University.	7
Iowa State College.	18
Kansas State Normal.	6
La. State University.	8
Michigan Agricultural College.	12
Michigan State Normal.	11
N. J. State Normal.	8
N. C. College for Women.	9
Ohio State College.	32
Ore. Agr. College.	29
Philadelphia Normal.	13
Rhode Island State College.	14
Simmons College, Boston.	22
Stevens Point Normal.	20
Stout Institute.	8
Teachers College, N. Y. C.	11
University of California.	39
University of Chicago.	6
University of Illinois.	25
University of Minnesota.	34
University of Texas.	9
University of Wisconsin.	23

Home Economics Conferences. Dr. Tigert, Commissioner of Education, called ten conferences of public school teachers and supervisors of home economics during the spring months.

The programs of these meetings were in charge of Mrs. Calvin, Specialist in Home

Economics in the Bureau of Education. They were intended to afford an opportunity for free discussion of public school problems. Replies to questionnaires sent to hundreds of home economics women evidenced that similar problems existed in all parts of the country; hence all the programs included about the same topics.

The relation of the home economics department to the school health program; the place of home economics in the platoon type school; courses of study for junior high schools; elective courses that will interest senior high school girls; improvement of teachers in service were some of the subjects discussed. The conferences were held in New York, Chicago, Spokane, Portland, Oregon, San Francisco, Los Angeles, Logan and Salt Lake City, Utah, Denver, and Kansas City, Mo.

Dinner meetings were usually held in connection with the conferences. At Los Angeles, 164 home economics women sat down together. Miss Bevier was the chief speaker at this dinner. Representative home economics women came from 33 different states.

Special Lectures for Parents. The Pennsylvania School for Social Service in coöperation with the Conference on Parenthood has been conducting a series of lecture-studies on the Bases of Child Development by the following authorities: Dr. Frank D. Watson, Professor of Sociology, Haverford College; Dr. Richard A. Bolt, Director of the American Child Hygiene Association; Dr. Leonard Blumgart, Psychiatrist, New York City; Dr. Joseph K. Hart, Director, The Pennsylvania School; Dr. John Haynes Holmes, Pastor, The Community Church, New York City; Mrs. Amey Eaton Watson, member of faculty in charge of the course.

The Seminar in Child Training, a series of ten lecture-studies, under the direction of Dr. Leonard Blumgart, was also held at the school.

A National Merchandise Fair is to be held in August by the National Retail Dry Goods Association. The Merchandise Fair, although centuries old in Europe, is new to the United States. The Great Merchandise Fairs of Leipsig, Prague, Nijni Novgorod and other centers offer the inspiration for those practical economies which American business is seeking. As many lines of merchandise as ordinarily are bought by the retail trade in mid-summer will be exhibited. The object will be to assemble related lines for the convenience of buyers. The Fair promises a means of reducing selling costs to manufacturers and wholesalers and buying costs to retailers. It is the plan of the Association to hold a series of meetings during the time of the Fair in which business problems having to do with merchandise and merchandise methods will be discussed.

ILLINOIS

Bradley Institute. The Home Economics Department has taken an active interest in the National Better Health Program. The Sophomore class in dietetics under the supervision of Leata Jones, Instructor in Foods and Nutrition, have been keeping personal health records. Many have improved in general health. Miss Jones plans to introduce this health work in the Freshman food classes next year.

Miss Jansen, instructor in the Training School for Nurses at the Proctor Hospital, has given lecture demonstrations on home care of the sick, prenatal and infant care, and first aid. These demonstrations have supplemented the course in home nursing.

Alma Long, Head of the Household Arts Department, presented an artistic and instructive exhibit of historic interest for the annual Open Night, on the twenty-fifth anniversary of Bradley Institute. A bridal outfit made one hundred and fifty years ago, an unusual quilted dress, hoops of the Civil War days, pointed waists and the full skirts of 1810, Paisley spawl, applique quilts, powder horns, artistic old fans, beautiful silk mits, and old parasols were

equally interesting. Students dressed in a costume of by-gone days sewed at an old Wheeler and Wilson machine, and ran spinning wheels. A little girl dressed in an old fashioned gown carried a china doll from the play house of 1790.

The Children's and Girls' Fashion Shows, staged the same evening, offered a comparison in costumes of the modern day.

The class in Home Management under the supervision of Geraldine Hadley, Dean of Home Economics, has been formulating a household account book. Groups of students and two instructors have composed a family group in the practice house. The cost of food as purchased per person per meal has averaged twenty-two cents.

The members of this class have also kept personal expense accounts. This has stimulated an interest in budgeting. Many of the students in this class will teach the coming year and it is hoped that this project will lead to actual practice in following a definite plan for expenditure.

MICHIGAN

The Michigan Home Economics Association is issuing a news letter to "offer opportunity for exchanging ideas and for sending out information to members which will stimulate professional interest and fellowship and promote standards of home economics education in Michigan. The first number contains news items, reports of meetings, and an outline of the points brought out in a discussion of the weaknesses of high school preparation of students as revealed in the first year of college work.

The executive committee of the association has recommended that undergraduate associations be developed and that they be urged to affiliate with the state organization with the annual payment of \$1.00 for every 25 members.

Detroit Program Against Malnutrition. Detroit has adopted the plan of selecting as malnourished the children who are 15 percent underweight. All public school children and many from private schools have been weighed and measured. The medical in-

spectors of the Health Department are now giving a physical examination to this entire group which represents about 10,000 children. Those who have no impairing physical defects will be invited to join nutrition classes, under the direction of a trained nutrition worker. The school nurses have all had a special course in nutrition and the nurses who carry on the class work with the children meet the nutrition worker for special instruction.

Those with defects will not be eligible until corrections have been made. By impairing defects are meant severe defects which could hinder metabolism. Six items are recognized in this group: a moderately or markedly enlarged thyroid, vision below a 20/30, pus discharge from the ears, unmistakable evidence of mouth breathing, a small size infected tonsil or an uninfected tonsil that reaches half way across the median line of the throat, and abscessed teeth.

Each nutrition class will meet with a nurse once a week for instruction in diet and hygiene. Every other week the children will be weighed and the weights plotted on charts. Parents will be expected to attend the weekly meetings. A parent must pledge cooperation before the child is admitted to the class. Twice daily the nutrition class children will assemble for a lunch of a half pint of milk and two graham crackers. Home diets will be surveyed and advice given. Through a grant of \$20,000 by the City Council, it is hoped there will be established at least 70 classes of about 20 children each.

In addition to this supplementary feeding program there are a number of voluntary agencies in the city which have been distributing milk to all children in certain schools. The Health Department program will not conflict with this work. The Department will form nutrition classes, but will not serve milk, inasmuch as the children already receive milk from other sources.

To harmonize the work of the various agencies engaged in feeding, and to avoid duplication of effort, the Health Commissioner has appointed a Central Committee on Nutrition on which are represented all public and private school lunch agencies and other groups interested in nutrition.

This program has come about as the result of a study of the state of nutrition of 94,000 school children in the Detroit Public Schools. An excellent survey of this work was presented to the Home Economics Section, Michigan State Teachers Association, by Dr. George T. Palmer, Epidemiologist, Detroit Department of Health.

NEW MEXICO

Contest for Girls in Vocational Home Economics. At the final meeting of the Dona Ana County Teachers' Association, the vocational home economics students, under the direction of Mrs. Elizabeth Kogen, presented an exhibit and contest.

The First National Bank of Las Cruces and eleven other firms offered prizes for a home economics contest. The 75 girls in the contest were selected from 300 taking the work in 13 schools in the county. A majority of the contestants were of Spanish-American or Indian origin, ranging in age from 10 to 19 years.

The girls appeared at the Las Cruces High School, attired in the dresses they had made. The dresses were judged according to the rules of the contest, five points being considered: (1) perfection of stitch, (2) neatness of finish, (3) suitability, (4) beauty of grace and design, (5) harmony of color and design.

At noon the contestants were guests at a picnic lunch prepared by the home economics department of the Las Cruces High School. The awarding of prizes took place in connection with the session of the County Teachers' Association.

On account of the hard times and high taxes, it had been suggested that the vocational work in the county be discontinued. Following the exhibit, which was attended by the County Federation of Women's Clubs in a body, a resolution was passed by that organization that a work so invaluable should continue. The Dona Ana County Teachers' Association passed the following resolution: "Be it resolved that, having seen the benefits and results of vocational education as conducted in this county, we heartily endorse this branch of education."

NEW YORK

The New York Nutrition Council. At the annual meeting of the New York Nutrition Council, held at the Russell Sage Foundation Building, May 18, the reports of the Committees on Statistics and Economic Standards were presented.

The Committee on Statistics had made a careful investigation of the work which has been done on height and weight as an index to nutrition. The report of this committee brings up the following questions: What is the normal weight? What is the relation of weight to height? To what extent are these an indication of proper nutrition? These questions, with careful analysis and deductions, are discussed in the report. It contains suggestions which will cause the average nutrition worker to think more deeply before arriving at final conclusions. Authorities are quoted and imperfections in conclusions are stated. This pamphlet has been printed and may be secured from the A. I. C. P., 105 East Twenty-second St., New York City, at 25 cents a copy.

The Committee on Economic Standards, recognizing the difficulties of various agencies in arranging satisfactory food budgets, has prepared a plan whereby any social worker may work out a satisfactory budget for a child of any age. Further, it has prepared fifteen points in nutrition for the social service worker. These two reports combined in one leaflet have been published and may be secured from the A. I. C. P. at 25 cents.

At one meeting of the Council, Dr. Charles Hendee Smith, Chairman of the Medical Committee, presented a program which brought up to date the latest material on medical aspects of nutrition. The program of the meeting presenting the dental aspects of nutrition was arranged by the Dental Committee, Dr. T. P. Hyatt, Chairman. The Current Events Committee has kept the Council posted on current projects in nutrition, as well as additions to the literature on nutrition. One meeting, arranged by the Council in coöperation with the American Relief Administration, The New

York Chapter of the American Red Cross, and the Pediatric Section of the Academy of Medicine, was addressed by Dr. Clemens Pirquet of Vienna. Other out-of-town speakers have been Dr. E. V. McCollum of Baltimore, Dr. Katharine Blunt of Chicago, Cornelia Lyne, representing the National Child Health Council, and Flora Rose of Cornell University.

The membership of the Council includes physicians, educators, dentists, nurses, nutrition workers, social service workers, and representatives of organizations which are carrying on nutrition as a part of their programs.

The officers for the coming year are: Chairman, George R. Bedinger, New York County Chapter, A. R. C.; Secretary, Jean Lee Hunt, Bureau of Educational Experiments; Chairman of Program Committee, Lucy H. Gillett, A. I. C. P.; Treasurer, Dr. M. Alice Asserson, New York Tuberculosis Association.

The College of Home Economics, Syracuse University, opened in the fall of 1918 with 63 students; at the opening of the present school year there were 317 students enrolled. The College was established by Dean Florence Knapp with the conviction that one result of women's part in the war had been to make scientific homemaking mandatory for all generations. It has outgrown its quarters in the Joseph Slocum College of Agriculture and the trustees acknowledge that one of the pressing needs of the University today is a building for home economics. In a cafeteria, carried on under the direction of two students, a noonday meal, consisting of four courses, is prepared and served at cost by the students. The most recent development of the work is the organization of classes in nutrition directed by the medical staff of the College of Medicine in coördination with the home economics faculty. Women regularly enrolled in any of the colleges of the University may elect special work in home economics as a part of their chosen course, and regular home economics students have the option of specializing in different groups during the junior and senior years.

OHIO

The Food Class of the Lincoln Junior High School, Youngstown, under the direction of Bertina A. Leete, solved the problem in that school of running the lunch room with the products of the cooking classes.

Three classes meet each day for two periods of forty minutes each. The work is so planned that each group of two girls, or each individual girl, as the case may be, prepares a dish of family-size portions, and when all are combined, there is enough to serve those who patronize the cafeteria. In the household arts class the work is necessarily lacking in uniformity each day, but during the semester each girl takes her turn at serving at the counter, preparing salads and soups, and making coffee or cocoa. The teacher plans the menus for a week or two in advance, buying accordingly. Wholesalers are glad to sell to the cafeteria, and a local grocer supplies the lesser needs.

The Commercial Department is an ally of the cafeteria, and its students take entire charge of the business side, checking, cashing, bookkeeping, banking, and writing checks. Other departments also cooperate. As a result the cafeteria has stenciled designs appliquéd on the curtain draperies, oilcloth centerpieces on the tables, wicker bud vases for flowers, artistic price tags in wire holders made by the sheet metal workers, many posters, and a menu board changed daily by one of the art students.

The aim is to sell for cost, plus overhead, the latter including free meals to the girls who work in the cafeteria, and the pay of two dishwashers. The lack of efficient working conditions, and the inexperience of the workers make the overhead large for the number served.

There is sufficient repetition so that pupils become familiar with general and particular processes, and they work in quantity suitable for a family. There is a high standard for the finished product. As each takes her turn serving at the counter, a definite increase in responsibility and initiative has been noticed.

PENNSYLVANIA

At a meeting of the **Home Economics Section of the Central Arts Association of Pennsylvania** held in the Technical High School, Harrisburg, Mr. James M. Glass, of the State Department of Public Instruction, spoke on the subject, *The Organization of the Curriculum for the Junior High School*. Defining the terms "Program of Studies," "Curriculum and Course of Studies," he applied them practically to the junior high school, the school which must bridge the gulf between the elementary and secondary schools.

A general discussion upon questions pertinent to teachers of home economics followed. Mr. Taylor, also of the State Department of Public Instruction, brought out twelve essential qualifications for the successful teacher.

At the **Home Economics Section of Schoolmen's Week**, Helen Dodge challenged the workers of the state in her talk, "Fitting the Home Economics Course to the Needs of the Girl." She urged the need for greater knowledge of home conditions in order that teachers may plan their courses in accordance with the actual needs of the home. The association voted to start a state-wide survey of home conditions. A nucleus committee of Philadelphia women was appointed to direct and organize the survey. To this will be added two other members chosen from the state at large. The work is under way at the present time and some usable material should soon be in hand.

The **Domestic Arts Section of the Philadelphia Home Economics Association** was addressed on April 26 by Professor Hasic, of Columbia University, on "The Project Method in Domestic Arts Education."

SOUTH CAROLINA

The **South Carolina Home Economics Association** held its annual meeting at Columbia. Miss Swygert of Chicora College, speaking on *The Relation of the Homemaker to the Community*, said the homemaker has a great responsibility in merely

making the right kind of citizens of her own children. Beatrice Perry, in charge of the cafeteria at Winthrop College, took up the different phases of work—school lunch, cafeteria, tea room, hotels, and hospitals. Florence Ward of the Extension Office, Washington, D. C., outlined A Uniform Home Economics Program. Helen Louise Johnson of New York City discussed the three fold application of efficiency, physical, intellectual, and spiritual, as concerns home economics in the public school. Edith Thomas, regional director for the Southern states in the American Home Economics Association, told of the work being done in North Carolina and of the organization of the Southern Region. After her discussion of the re-organization of the American Association the South Carolina Association decided to affiliate. Christine South was appointed representative councilor, and Sarah Gillman president.

TEXAS

The Domestic Art Students of Sul Ross State Normal College, Alpine, under the direction of Grace Pedell, Head of the Home Economics Department, gave a style show in the auditorium, May 16. The Parade of Costumes was cleverly introduced by a playlet showing a girl's need of training in the selection and designing of clothes. About seventy beautiful costumes—simple ginghams and tissues, fluffy organdies, Hollin suits, sport suits, and silk and wool dresses—were effectively displayed by the young promenaders who strolled and skipped and pirouetted across the stage to the strains of the violin. As each model appeared, there were flashed on the screen at the right the name of the designer, the cost of material, and the approximate cost of the garment if purchased ready-made. Many of the dresses cost only a half or a third of the prices charged by ready-to-wear houses. The auditorium was filled to its capacity, and the spectators evidenced hearty appreciation for the originality, neatness, and beauty achieved by the sixteen young designers.

UTAH

The Utah Home Economics Association held a special business meeting in Salt Lake City May 13, for the purpose of adopting a new Constitution and taking care of other business which would enable the Utah Association to affiliate with the American Home Economics Association. They voted to send a delegate to the National Convention in Oregon. The Utah Association has 76 members.

Teacher Training. Genevieve Fisher, of the Federal Board for Vocational Education, recently visited the Utah Agricultural College in the interest of home economics teacher training work. She discussed home economics problems with the staff and the teacher training class. Her visit was shared with the Logan High School home economics students, with whom the college apprentice teaching is done. The high school foods class regarded it a special privilege to prepare and serve, in their dining room, a luncheon in honor of Miss Fisher.

Home Economics Conferences. Utah's Home Economics workers found much immediate pleasure and permanent profit in the two days of conferences, April 28 and 29, under the leadership of Mrs. Henrietta Calvin, from the Federal Bureau of Education. In both meetings, one in the Home Economics Building of the Utah Agricultural College, the other in Salt Lake City, the substance and the spirit of home economics were subjects of lively discussion. Information as to home economics work, which Mrs. Calvin brought from other sections, gave Utah teachers a basis for helpful comparison and analysis of work in this state. Through the conferences Mrs. Calvin gave a bigger view of home economics than it is possible to get without such contacts.

The Fourth Annual Junior Extension Conference was held April 24-29 at the Utah Agricultural College, for the purpose of training local leaders in conducting boys and girls club work in the counties and communities of the state. Before they were eligible to attend the school they were

required to have their club members selected, clubs organized, and projects chosen, and to pledge themselves to carry the project to its completion.

Every morning from 6:45 to 8:30 a daily setting up program was conducted. The leaders then went to their several departments for intensive instruction in the subject matter pertaining to the projects. In addition, a demonstration team was trained in each department, grain and stock judging contests were held, and project outlines were criticized.

Afternoon sessions were devoted to discussion of work common to all clubs. Club meetings, demonstrations, tours, and exhibits were planned and criticized by the group. Demonstrations were given in cleaning and pressing clothing, preserving eggs, treatment of seed potatoes, and other kinds of practical work.

Various social events were given in honor of the leaders. Feature motion picture reels and reels pertaining directly to club work were shown on the campus. The leaders were taught numerous games and were then required to demonstrate their ability to teach them to others. At a camp fire party they played games, sang club songs, and toasted marshmallows while one of the English professors told camp fire stories.

The program for the week was so planned that every event gave something that will help in putting over work for the year.

WASHINGTON

State College of Washington. Leila May DeMers of Eureka, Montana, has just been elected president of the Ellen H. Richards Club, composed of home economics students of the State College of Washington. Olive Hatfield, Tacoma, is vice-president; Myrtle Johnson, Wenatchee, secretary; Jean MacGregor, Hooper, treasurer; and Grace Scroggin, Spokane, reporter.

The University of Washington. Over 200 guests from the Parent-Teacher Association attended the Spring Fashion Show. They visited the Home Economics building and the Practice Cottage, had lunch at the

Commons, and attended the Fashion Show which was managed by a committee of home economics girls. Clothing budgets for the college girl were distributed at this time. These budgets are used by the Dean of Women throughout the year in writing to mothers whose daughters are planning to enter college and who want to know how much their clothing is likely to cost. A copy of the budget is on file in the Journal Office and will be loaned on receipt of ten cents.

At the Annual Open House of Fine Arts and Architecture, May 19 and 20, a conference for high school girls was held on the campus.

WISCONSIN

The University of Wisconsin. The annual art exhibit of the Home Economics Department was displayed in the State Historical Museum. The exhibit included dolls in historic costume and examples of art weaving in table runners, pillow covers, tray cloths, hand-bags and rugs, block printing, tie and dye work, and batik.

Each student in the advanced clothing class in the University is making a garment for some child recommended by the Public Welfare. The student visited the home, became acquainted with the mother and family, measured the child, purchased the material, and will give the garment to the child. Old material which the student may have is used instead of new if the instructor approves.

During the interim between semesters the Practice Cottage housed two guests, a three and a half months old baby and her mother. The baby had been placed under the care of Dr. Dorothy Reed Mendenhall. Although the baby was in a serious condition, her only need was proper feeding and the regulation of her daily schedule. These were provided at the Practice Cottage, and the mother was trained in preparing the formula. Improvement began at once and continued after the baby returned to her home.

The theoretical study of the nutritional needs of children as given in the course in nutrition and dietetics is founded upon

intensive studies of the food habits and food consumption of individual children, by the students of this course. Subjects for this study are found among children in the families of different members of the class and of the University faculty. All the food eaten by the child for a three day interval is carefully weighed or measured and its food value calculated; food prejudices and differences in food habits are noted. By this method the student obtains a realization of the scope of the problems involved in the feeding of children as well as the possibility of their solution.

Popularizing Home Economics in the Madison High Schools. To interest girls in their education beyond the elementary school, and to acquaint them with the home economics work in the high school, the following plan was carried out.

The eighth grade home economics classes in the city were invited by the high school home economics girls to visit their classes. The eighth year girls came to the "party" during their regular class periods. The classroom teacher and the principal of the school were guests also. The high school girls acting as hostesses escorted the visitors in small groups through the kitchens, sewing rooms, laundry, cafeteria, and art rooms where work was displayed. In the large living-dining room of the model apartment the guests were comfortably seated while refreshments were served by their hostesses. The principal of the high school joined them and discussed their plans for high school and the courses offered.

NOTES

Isabel Bevier has been elected Professor Emeritus by the Board of Trustees of the University of Illinois. This is the first occasion on which a professor of home economics has been so recognized.

Mrs. Henrietta Calvin has been honored by the presentation of the degree, Doctor of Pedagogy, by Temple University, Philadelphia.

Ola Powell, of the United States Department of Agriculture, has returned to France to carry on food preservation work under the direction of the French Ministry of Agri-

culture. The work is similar to that done in connection with the extension work of the Department of Agriculture and the State agricultural colleges in this country.

The **United States Civil Service Commission** announces open competitive examinations for positions in the Indian Service, August 9, September 20, and November 8. At present there are about fifty vacancies in the positions of matron, assistant matron, seamstress, housekeeper, field matron, industrial teacher. For further information address the United States Civil Service Commission, Washington, D. C.

Dr. Ethel M. Watters, Director of the Bureau of Child Hygiene in California and a well-known pediatrician, has been appointed consultant in the administration of the Sheppard-Towner Maternity Act under the Federal Children's Bureau. This Bureau will administer, in cooperation with the States, the federal funds appropriated for promoting the welfare and hygiene of maternity and infancy. All but six states have accepted the provisions of the act.

Course for Student Dietitians. The Presbyterian Hospital, New York City, is offering a course to student dietitians in its newly organized Department of Nutrition. The work covers the various phases of applied metabolic and specialized dietetics, as the preparation, calculation, charting, and supervision of special diets issued to the general, metabolic, and private wards. Filling baby formulae, visiting patients in reference to diet, explanation of cases by physicians, group meetings, and discussions are included. Preference is given to graduates of four-year courses in home economics, as the metabolic work requires a sound background of science.

Positions in the United States are desired by two teachers in Australia who hold certificates from the University of Adelaide and have had two years' training in home economics. They wish to take further training while teaching here. Any one who can suggest such positions would render an appreciated service by writing to Miss Edith Devitt, Supervisor of Domestic Art, Education Department, Adelaide, South Australia.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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CALCIUM REQUIREMENTS OF CHILDREN*

H. C. SHERMAN AND EDITH HAWLEY

Extensive study (1) has shown that the calcium requirement of man for the maintenance of normal equilibrium is 0.45 gram per day per 70 kilograms of body weight, and dietary studies of typical American families have brought out the fact that the actual calcium content of the diet frequently falls below this requirement (1, 2). But it is hardly satisfactory to try to calculate children's needs from those of the adult, because the quantitative relation between the needs of growth and maintenance have not been worked out. After reviewing the literature it seemed necessary to have more data on calcium metabolism during childhood.

This paper deals briefly with four series of experiments on the calcium metabolism of twenty-one healthy, normal children from three to thirteen years of age, the full account of which has been published elsewhere (3). The purpose of the first series of experiments was to determine how much calcium is stored daily in the bodies of the normally growing children of different ages. Balance studies of the calcium and phosphorus intake and outgo were made on twelve children in groups of four for nine days each. The children were kept under the constant supervision of one of the writers (E. H.). This series was divided into three-day periods for the collection and analysis of material. The children received milk as a chief source of calcium in approximately the same amount as they were accustomed to in their own homes. For ten of the children this amounted to a pint and a half, the other two receiving about a pint daily. In addition to milk the diet consisted of bread, butter, orange juice, oat meal or macaroni, potato, apple, and meat. The quantity of milk in the diet was fixed; the other foods were in general *ad libitum*, but the quantities eaten were accurately determined in each case.

*Based on experiments carried out under the joint auspices of the Department of Social Welfare of the New York Association for Improving the Condition of the Poor, and the Department of Chemistry of Columbia University. The investigation was made possible by a grant from the research fund established by Mrs. Elizabeth Milbank Anderson.

Results of this study showed that on diets furnishing approximately the same amount of calcium, about 1 gram daily, children stored from 0.15 to 0.62 gram of calcium depending chiefly upon the size of the child. When the storage is expressed in terms of body weight, there was fair uniformity, averaging 0.01 gram calcium stored per kilogram of body weight per day. Phosphorus balances were more variable, being influenced not only by size but also by intake. Phosphorus storage averaged 0.008 gram per kilogram of body weight per day.

After we had thus found the rate at which children on such a diet stored calcium, the second series of experiments was undertaken. It was an intensive study on three children, four, five, and twelve years old, to determine on what amount of calcium they made optimum storage. It consisted of eight continuous experiments of six days each. The calcium intake was varied from period to period by systematic changes in the amount of milk in the diet from one half of a pint to a quart and a half. The diet also included bread, butter, orange juice, oat meal, macaroni or potato, apple sauce, corn flakes or prunes. It was found in these experiments that considerably more calcium was stored by the children on a quart of milk daily than was stored in the first series on one and one half pints. When they received less than one and one half pints of milk, calcium storage fell below the average figure found in the first series of experiments, 0.01 gram per kilogram per day. There was little, if any, greater storage when a quart and a half was given than on one quart. It seems clear that optimum storage was made on an allowance of one quart of milk per child per day, and that this is the amount which should normally be recommended.

The third and fourth series of experiments were planned to ascertain whether children utilize the calcium of vegetables as well as that of milk. The plan of the two series differed somewhat. The third series consisted of twenty-seven consecutive days divided into three experiments of nine days each. During experiments one and three, the children received, in addition to the simple diet used in this study, one pint of milk as the main source of calcium. During experiment two, enough carrots and spinach were added to this diet to increase the total calcium content to that of a diet containing one quart of milk, or the amount found in the second series of experiments to support optimum calcium storage. On such a change of calcium intake the children (five, six, and twelve years of age) should have stored considerably more calcium if the calcium of the extra vegetables were as well used as was that of the extra milk in the second series of experiments. This was not the case.

In the fourth series of experiments the plan was to keep the calcium intake the same throughout the thirty days. A diet of bread, butter, orange juice, oat meal, potatoes, and apple was used. During the first experiment the children received, in addition, one and one-half pints of milk. The milk intake in the second experiment was reduced one-half, and enough carrots, spinach, and celery were added to make the total calcium intake equal to that in the diet containing one and one-half pints of milk. Three children, six, ten, and thirteen years of age served in this series. The results were similar to those found in the third series of experiments. On the milk diet the children stored approximately the same that they stored in the first series of experiments on such a diet, viz., 0.01 gram per kilogram per day. When the vegetables were substituted for half the milk the calcium storage fell to about half that amount.

Phosphorus storage was more variable in these two series of experiments than was that of calcium. In some cases almost as much phosphorus was stored on the vegetable diet as on the milk diet, but in others there was a negative balance during the vegetable diet.

CONCLUSIONS

Healthy growing children on ordinarily good diet were found to store daily about 0.01 gram of calcium per kilogram of body weight.

When the amount of milk in the diet was increased to one quart per day for each child the storage of calcium was materially improved.

Carefully controlled experiments, with diets containing systematically varied amounts of milk, lead to the conclusion that one quart of milk per child per day is the amount required for optimum storage of calcium, and presumably, therefore, for optimum development of bones and teeth.

A quart of milk with a normal allowance of other foods will usually mean a daily intake of at least one gram of calcium for the growing child, which is more than the usual dietary standard for an adult. Hence in planning the dietaries of families containing children it seems advisable to allow a more liberal calcium content than has heretofore seemed necessary.

Repeated experiments under varied conditions indicate that children do not utilize the calcium of vegetables as efficiently as they do that of milk. The importance of vegetables in the diet of children is not questioned, but the vegetables should be used in addition to a liberal allowance

of milk and should not be allowed to reduce the amount of milk consumed.

The investigation as a whole emphasizes the conclusion that, however good the dietary in other respects, each child should receive a quart of milk in some form every day; and that this standard of milk consumption should be maintained at least up to the age of fourteen years.

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HOME PROBLEMS FOR HOUSEHOLD MANAGEMENT CLASSES¹

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In presenting training in household management to the high school girl, the real household for practice in management is the girl's own home. In most cases she is living at home and the parents wish to have her remain there under their observation. Her position in the home is that of household helper rather than director. If we can enlist the help of the mother who has faced the problem of managing that home, and then show the girl her relation to its management as a member of the household group, we keep her in her natural setting in the home. In suggesting the problems for study at home, the aim has been to begin with the study of the girl's individual problems, to establish her relation to the problems of the family as a group, and then to come back to the girl as an individual in the group. It is not expected that any one set of problems would fit all high school girls. However, the following series of problems is given as suggestive for developing the practice in home management at home:

¹ Extracts from an address presented at the Fifteenth Annual Convention of The National Society for Vocational Education, Kansas City, January 6, 1922.

1. How much time do you spend dressing yourself? Bring a plan of your room drawn to scale showing arrangement of furniture. Study the convenience of arrangement in relation to your dressing, trying to minimize steps and time.

2. Make a study of cleaning your room. How do you make unnecessary work for yourself? How can you improve your methods?

3. Keep a record of how you spend your time for a whole day. Make plans for another day avoiding wasted time and energy.

4. Study general household cleaning. Plan the contents and arrangement of a cleaning closet so that the work will be made as simple as possible.

5. Observe the time required to serve the food for a certain meal. Plan to make this service as little and yet as pleasing as possible.

6. Record the time required to wash and put away the dishes for a certain meal. See how much time can be saved by care in soiling fewer dishes, soaking pans, using dish drainer and convenient dish cabinet.

7. Cook the breakfasts for the family for a series of mornings. Record the time spent and the order of work, trying to improve each day.

8. Bring a plan of the kitchen arrangement and make any changes that are possible to improve its convenience.

9. Study the cleaning of the kitchen, methods, labor-saving equipment, cleansing agents, care of food storage places.

10. Observe the order of work and time spent by your mother in preparing a dinner.

11. Taking the same menu, prepare the dinner yourself, trying to do as well as, or better than, your mother.

12. Make out a list of standard dishes which you should learn to cook in family-size quantities before the term is over. Report these as you cook them, giving name of dish, materials used with quantities and cost, method of preparation, number served, time spent in preparation, parent's criticism.

13. Observe how your mother selects and orders food.

14. Working with her, plan the meals for a week and do all the buying. Bring in your meal plans and purchase slips for criticism.

15. Go with your mother to pay bills. How are they paid? How are receipts kept?

16. Keep records, personal and household. These are to be used, after one month, in budget study.

17. Study the cost of your household laundry, and observe results. Study soaps and other cleansing agents.

18. Take charge of the laundering of your own garments for a week. Watch for excellence of results, time and cost.

19. Visit commercial laundry or a well equipped home laundry.

20. Make an inventory of your clothing and estimate its cost per year.

21. Find the cost of your home in rent or figure the cost of ownership with taxes, insurance, depreciation, etc. Figure your share of this shelter cost.

22. Add to this cost the furniture cost per year, and the cost of operating, and find your share of this.

23. Find the cost of food for a period of time and figure your share of this.

24. What have been the miscellaneous expenses for the month? What share of these is yours?

25. Sum up what it costs to keep you. Is your cost a fair share? Are you living better than you will be able to support yourself with your own earnings?

26. Estimate the total income of your home and compare its plan of distribution with average budgets.

27. How much time and money is spent on household labors in your home? Could more energy, time, money be saved by doing less of some things and more of others?
28. Study the cost and value of a home garden, if gardens are possible in the locality.
29. Bring reports of the cost and income from the keeping of a cow, and of chickens.
30. Assume the complete management of your home for a time.
31. How plan to close a house for a time. How avoid leaving a chance for the development of household pests? How pack for a trip or for moving?

MOTION STUDY AND COSTING IN HOUSEHOLD AND HOME ORGANIZATION¹

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It is estimated that there are at least eight million women engaged in household affairs in Britain, and if, by a system of economical working, one hour per day could be saved in each case, eight million hours daily would be the resulting economy. It has been estimated at various times that from one-quarter to one-third of household labor is generally non-productive or wasteful. In some cases, the waste is estimated at 50 per cent; consequently, there is an enormous field for improved effort. Motion study, undertaken in America, had relation to organized industry, and was definitely designed to reduce the working costs under which organizations employed skilled and unskilled labor. An early experiment on unskilled labor has shown that a very considerable improvement can be made by a suitable selection of members of the staff for particular jobs, according to physique, capacity, intelligence; and, further, that the methods adopted in actual working are capable of systematized training. The analysis was re-inforced by photographic studies of the actual movements of the worker, and, in many cases, it was necessary for the individual to be trained to alter the method of carrying out an operation.

The application of these results to the home is not a simple matter. The idea of having systematic records is so revolutionary that it would in general, be scoffed at.

¹ Extracts from a paper read at a Conference held in connection with the Ideal Homes Exhibition, London.

It would not be impossible to educate a group of home workers, provided they were to work under suitable conditions afterwards, but an immediate problem arises from the fact that almost every kitchen and every arrangement of equipment in every household varies greatly from every other; secondly, the methods taught in an ideal kitchen for an ideal home might not be operative in the ordinary home, as it stands.

The amount of wastage which goes on daily is largely due to the defective lay-out of kitchens and other rooms. Individuals start life as married couples with the good wishes of their friends and the unfortunate acceptance of many gifts which have to be cleaned and restored throughout a long lifetime at infinite labor and possibly without the production of much happiness. One of the fundamental principles for securing diminution of labor is to eliminate useless articles from household equipment. Having done this, it is then necessary to arrange and organize the essential equipment so that it can be reached, if it has to be handled, with the minimum of movement, and that it can be cleaned with the minimum effort.

Apart from the lay-out of the kitchen or home, there is the important question of the lay-out of time to the best advantage. In comparatively few households will regular time-tables be found, but it is important that a definite time be set apart for a particular operation, and that this operation be carried out at the allotted time and within definite time limits. It is the simplest and the commonest vice to be extremely busy in doing one thing after another without an organized plan, and consequently to achieve comparatively little.

The daily routine should not only provide for certain operations to be carried out between definite hours, but it should also provide for suitable rest pauses of, say, 30 minutes in some cases, 15 minutes in others, when the definite program will be to cease work and relax. This has not only the effect of reducing fatigue, but also of reducing nerve strain, one of the most fruitful causes of discord and difficulty.

As a matter of simple experiment, the ordinary household procedure can be checked most easily by making a number of time-tables, and by using the clock as the chief measuring instrument. A given operation is performed from one week to another, and it should be easy to time the proceedings exactly. The second step would then be to examine the various movements in the process and to see how many of them can be reduced or eliminated. Some may be eliminated by more careful planning, others will require an alteration in the disposition of equipment.

Costing is regarded, in general, as a means of determining, in industrial business, what charges should be made for particular work done, and, through costing economy, management can be effected. The household budget is capable of analysis, but, in this sense, costing is a different matter from costing in industrial factories.

To understand the budget properly, it is necessary to divide it into certain broad sections without analyzing the details in those sections first. The special sections are: (1) household charges—rent, insurance, taxes; (2) clothing—boots, personal expenses; (3) food supplies—bread, meat, vegetables, tea, sugar, milk, etc.; (4) household repairs; (5) sundry expenditures. A proper record of these items from week to week will soon show where excess expenditure occurs; it will then be necessary to analyze the expenditure in one or other of the groups. There is also the question of lessening costs by ordering and shopping in an economical fashion. It may be possible to buy an article cheaply in a given place, but to spend a certain amount on travelling and a great deal of time before this is achieved. The balance is to be sought in the apportionment of spare time. It does not always follow that the individual shopper is economical when she has secured a "bargain." It might result in waste of time, or even bad health, which makes it anything but a wise expenditure.

Finally, attention may be drawn to the psychological factors involved in household work. It is unusual for household work to be completed early in the day. This is due to more than one cause. Interruptions are frequent, but there is also some tendency to think that things are not being well done unless they are prolonged for many working hours. This is a deep rooted and injurious opinion held by many housekeepers. It would revolt many to find an individual resting, yet experience and experimental work has shown that this is of prime importance in increasing the output of work. If working hours are reduced systematically, the perpetual grind of unfinished work that causes the harassed look on many a face can be largely obviated.

Nervous tension is very common; it may be relieved by rest pauses at suitable intervals, or by change of environment, at long intervals, commonly known as a holiday. Sometimes the cost to a household in providing a holiday will be one of the best items of expenditure in their budget.

THE EVOLUTION OF A NUTRITION CLASS PROGRAM

GERTRUDE GATES MUDGE

Supervisor of Nutrition, New York County Chapter, American Red Cross

Within the past few years, those interested in nutrition class work have witnessed a phenomenal growth in the popularity of the movement. Classes have been initiated by many types of health and social agencies, by schools, and by churches. All manner of workers have had a part in the undertaking; the physician, the nurse, the home economics and physical training teachers, the "nutrition specialist" with combined home economics, social service, and health training, and the plain "college graduate" with no speciality but much enthusiasm. The New York Nutrition Council, with an attendance at its monthly meetings of from two to three hundred, attests the widespread interest in the work. Truly, the undernourished child is in the lime-light of the health education stage.

With this mushroom growth, has come an ever increasing realization of the necessity for careful standardization of methods of work, in order to make past accomplishments of permanent value. Past achievements must be evaluated and future plans based upon previous success and failures. As a contribution to such an inventory of nutrition stock, the following brief history of the evolution of a nutrition class program is presented for your consideration.

The Health Service, New York County Chapter, American Red Cross opened its first Child Health Stations in the fall of 1920. Two were located in settlement houses on the lower East and West sides, in Jewish and Italian districts, respectively. Later two others were opened: one in an uptown public school where the work was conducted in co-operation with the New York City Departments of Health and Education and Teachers' College, Columbia University; the other in co-operation with the East Harlem Health Center, which is located on the upper east side in an Italian district. Only the work of the first two Stations is reported here.

Two nutrition workers were appointed for each Station. Medical service was supplied by paid pediatricists and dental care made available through the services of paid oral hygienists and volunteer dentists. Undernourished children for the nutrition classes were secured according to the approved method of the time, by weighing and measuring all the

children in the first three grades of public schools in the respective neighborhoods. Children found to be 8 per cent or more underweight for height and age were given a thorough physical examination, and, at the recommendation of the pediatricists, were enrolled in nutrition classes. These groups met weekly for a period of four months for nutrition instruction, after which time they were transferred to a monthly basis. The outline used for the nutrition class lessons is as follows:

I. Food (at least 8 lessons)

1-5. *Simple foods* which should be included in children's diets. The purpose of these lessons should be to acquaint the children with these foods and to encourage them to eat and enjoy the foods thus introduced to them.

6-8. *Meals*. In these lessons the points covered should be the need of meals at regular hours, and the suitable amounts and combinations of foods. If possible, children should be seated at a table and should learn something about proper table manners as well as how to set a table for meals.

II. General hygiene (6 lessons)

9. *Physiology* lesson, stressing need of laxative foods.

10. *Posture and exercise*, including value of deep breathing.

11. *General cleanliness*.

12. *Sleep and rest*.

13-14. *Teeth*, including the importance of correct food for building of teeth, the value of thorough mastication of food, and the tooth brush drill. These lessons should be given in cooperation with the Red Cross dentists and oral hygienists.

III. Subject matter which should be a part of each lesson

1. Posture.

2. General Cleanliness.

3. Sleep and rest.

Note: These lessons are designed to cover a period of four months or about 16 lessons. Fourteen of the lessons are provided for by the above outline, leaving 2 to be used for any special educational need which has become apparent in connection with the conduct of the individual class.

All children were transferred to the monthly classes at the end of the four month's period of intensive teaching, whether or not they had reached average weight for their height and age. If they had fulfilled the requirements for graduation, a ceremony with accompanying honors took place, and a diploma was given to each one. The requirements for graduation were as follows: 1. That the child shall have had, as far as possible, all physical defects corrected. 2. That he shall have approximately reached average weight for his height and age. 3. That he shall have regularly attended the sessions of his nutrition class. 4. That he be practicing in his daily life the lessons learned in class.

Frequent home visits were made by the nutrition workers, not only to urge the parents to coöperate in the correction of the physical defects of their children, but also to carry the nutrition class teaching into the homes. It was always the desire of the workers that the parents attend the classes whenever possible, but, as many were too busy to come weekly to the Stations, teaching in the homes became of more and more importance.

During the first year, classes were organized and conducted according to this plan. Firm contacts were made, not only with the families, but also with the coöperating settlement houses, the neighboring social and health agencies, and especially with the public schools. Both principals and teachers became increasingly interested in this educational program, and frequently referred special cases to the nutrition workers for attention.

As time elapsed, it became more and more apparent to the workers that logically the classes should be organized in the school and conducted in school hours as an integral part of the school program, the Stations being used primarily for pre-school work. At the close of the first year, with the approval of the Health Service Committee and the school authorities, it was decided that the newly organized classes should be held in the schools. The general procedure in their organization was similar to that previously described. Classes were held in any vacant space available; the auditorium, a class room, the teachers' room, and even the lobby of the assembly hall were pressed into service. The nutrition workers found these necessary adjustments to the school system irksome, as compared to the conveniences afforded at the Child Health Stations. However, the results more than justified their added efforts. The children attended more regularly as they were sent directly from the different class rooms. The teaching carried more weight in the home because it was identified with the school system, with which the parents were acquainted. The principals and teachers were more closely allied with the new health teaching, and added their authority to the carrying out of the program. The nutrition workers were then able to coöperate more effectively in the health activities of the schools.

After four months of this experiment, the workers decided that one more step was necessary in this evolution of the nutrition class. So far, only undernourished children of the primary grades had been selected

for membership in the classes, no instruction being made available for the so-called normal children. Conferences with principals and class teachers assured the nutrition workers of their approval of the plan to conduct the teaching of nutrition and health for the benefit of the entire class room, this to be done in close coöperation with the grade teacher. Three such classes of third grade children were organized. The general outline of work was briefly as follows:

- I. Selection of children
 - a. Number—all children in one class
 - b. Grade—2nd or 3rd grade
 - c. Age—7 to 8 years
 - d. Sex—Either *all* boys or *all* girls, if possible
- II. Medical information
 - a. Record of school physician to be used in coöperation with school nurse
 - b. Special physical examination by Red Cross pediatricist for undernourished in class, number determined by usual procedure of height and weight measurements
- III. Treatment of physical defects
 - a. All children should have: (1) oral hygiene, (2) dental repair work
 - b. Undernourished children should have other physical defects remedied as far as possible
- IV. Conduct of nutrition class
 - a. Schedule—class to be held once a week for 15 or 20 minutes during school hours, as in physical training period, etc.
 - b. Weight records—all children to be weighed every week, if possible
 - c. Class instruction—to be given by grade teacher assisted by nutrition worker, or by nutrition worker herself, as preferred
 - d. Duration of class—three or four months
 - e. Home visiting—visits to be made only in homes of undernourished children and others at the special request of the grade teacher

At the termination of this demonstration, it was the unanimous opinion of the nutrition workers that nutrition education should not only have a permanent place in the school curriculum, but that it should be made available for all children of the primary as well as the grammar school grades. A private agency, such as the American Red Cross, can render inestimable service by demonstrating the value of such education in health habits, but it is for the established school personnel to assume the permanent responsibility for the program. The problem as to who is best qualified to assume this responsibility is yet to be solved. Together, the home economics and grade teachers and the school nurse should work for the common health of their school children.

ARTIFICIAL SILK*

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In the last century a new textile fiber known as artificial silk has been invented and is fast taking its place among the natural vegetable and animal fibers. Although there is a great deal still to be done in the improvement of this fiber, its progress in the textile world has been very rapid and it is sure to have a wonderful future.

All early artificial silk was made by the Chardonnet process or a modification of it, nitrocellulose being used as a basis (1), (2). Chardonnet himself opened up the first factory and was almost without a competitor until seven years later when Pauly took out a patent for the manufacture of cuprammonium silk. These processes were French and German in origin, but viscose silk, the latest and at present the most important of any of the forms of artificial silk, is entirely English in both origin and development. It is distinguished from the others by its great covering power, its luster and greater resistance to dyeing, and is being used very widely. Cellulose acetate is also being manufactured at present although only to a limited extent (3).

Development of the industry. The war greatly reduced the European production of artificial silk, stopping work in all the plants in Belgium and in invaded portions of France, while the shortage of labor and chemicals affected the industry in other countries. The great Tubize Company in Belgium (4), in operation since 1900, with a pre-war production of about 10,000 pounds daily, dismantled its factories and buried or otherwise concealed its lead, copper, and other metal fixtures, its electric motors, generators, wiring, and belting, and escaped German confiscation. Shortly after the war closed, this factory was operating at the rate of its pre-war output and showed a profit for the fiscal year, 1919, of 4,178,264 francs. This plant uses the Chardonnet process and is about to commence making silk by the viscose process. Recently it contracted with an American syndicate to erect a large artificial silk factory in the United States, with an initial capital of \$5,000,000. Another Belgian factory, after ten months' work of restoring half of its installation, reports a profit of 2,142,757 francs for four months' operation in 1919 (4). The manufacture of this chemically produced textile

* This paper is part of a cooperative project done under the direction of Professors Iva L. Brandt of the Home Economics Dept. and Ruth O'Brien of the Chemistry Dept.

is now going on in Switzerland, Germany, Poland, Russia, Italy, Japan, and the United States, as well as in Belgium.

It is of interest that the bulk of imported artificial silk yarns, threads, and filaments came from England in 1918, but in 1919 receipts from Switzerland of \$1,983,251 exceed those from England by \$1,311,883. Valuable imports of these yarns from the Netherlands, Italy, Belgium, and France, and of other manufactures of artificial silk from Switzerland and the Netherlands, as shown for the calendar year 1919, indicate a rapid recovery to normal industry. Although \$200,685 worth of yarns came from Germany in 1919, it dropped to sixth among the countries from which these imports were derived, whereas, at the outbreak of the war, it was crowding Belgium for second rank following England (4).

According to a recent report of Assistant Trade Commissioner Breed of Prague, a group of German textile manufacturers has established a new company in Prague for the manufacture of artificial silk (5). Other important concerns are also reported to be established in this industry. According to the American Minister at Prague, this industry is making unusual progress in Czecho-Slovakia (6). In May, 1921, four concerns, with a total capitalization of 130,000,000 crowns, had been established.

In July, 1920, it was announced that the Italian company, S. N. I. A. (*Societa' di Navigazione Italo Americana*), which had increased its capital and had extended the scope of its activities, would in the near future begin the construction of several new plants for the manufacture of artificial silk (7). These plants, it was thought, would be located at Turin, Naples, Orbasano, and Bra. In the first two instances sites had already been purchased, and it was expected that these new plants would employ not less than 10,000 workers. The S. N. I. A. Company, through the controlling interest which it holds both in the "Cines" Seta Artificiale and in the Viscosa Company of Pavia, as well as in the *Societa' Italiana della Viscosa*, which is located at Veneria Reale, near Turin, is already the dominant factor in the artificial silk industry of Italy.

Since European countries were the first to develop artificial silk commercially, we find that it features in the import trade of the United States for about ten years before it appears to any great extent among its exports. Artificial silk and its manufacturers were first shown separately in one class in the statistical classification of imports for the fiscal year 1911 with a total of 1,947,423 pounds valued at \$3,279,559 (4). All but 12 pounds of this came from Europe.

From 1912 to 1920, inclusive, the imports of artificial silk yarns, threads, and filaments amounted to 14,330,366 pounds valued at \$25,351,906 or an average of 1,592,263 pounds annually. Other manufactures for the corresponding nine years totaled \$5,236,650, or an average of \$581,850 annually.

The shortage of real silk during the war period resulted in an increased demand for substitutes for natural silk. At no time during or since the war has the world supply of artificial silk been equal to the demand. The substitute, of course, cannot compete with the natural silk except in the lower grades, but in its own field, in novelties and in combination with cotton, it has a wide range of application.

The first plant to produce artificial silk in the United States was established in 1911 as a branch of an English firm, and used the viscose method. From 1911 the figure of 320,000 pounds' production of this concern rose to 9,000,000 pounds in 1920, and at the present time expansion is under way which will more than double its capacity (8). In 1919, there were only two concerns in the United States actually producing artificial silk yarns on a commercial scale, one located at Cleveland, Ohio, and the other with factories at Marcus Hook, Pa., and Roanoke, Virginia (4). The latter was said to be producing from 150,000 to 200,000 pounds per week in September, 1920. The extraordinary demand for this product, however, has led to the recent formation of other corporations, with abundant capital to establish large factories. Each of three large American concerns is said to be allied with the largest producers in France, England, and Belgium, respectively. The firms in this country now manufacturing artificial silk are the Viscose Company, Lewiston, Pa.; Du Pont Fiber Silk Company, Buffalo; Tubize Artificial Silk Company, Hopewell, Va., which manufactures nitro-cellulose silk; American Cellulose and Chemical Manufacturing Company, Cumberland, Md., which also manufactures a cellulose-acetate silk; and R. P. Dicks, Patterson, New Jersey (9).

In June, 1921, the board of managers of the Silk Association of America elected eleven new firms to membership. Two artificial silk concerns, the Viscose Company, and the du Pont Fibersilk Company of Buffalo, were among the eleven, being eligible through a recent decision of the board (10).

Chemical and physical properties. Artificial silk has many defects as compared with the natural silk. Some of these are: the size or the denier of the threads is too great; the strength and especially the elasticity are not satisfactory; the loss of strength on wetting is excessive;

the lack of covering power reduces the value of the products; some types do not always dye evenly. Of course, as was stated, these defects are gradually being overcome. Each company is experimenting and working out improvements along these lines. Even now the Lustron Company claims to have a silk which has a great strength when wet. Viscose has a much greater wet strength than nitro-cellulose.

The artificial substitutes excel the natural silk in one quality only—luster. The products of the various processes differ from one another and from the natural silk in chemical composition. Consequently they have different properties and must be handled differently in spinning, bleaching, and dyeing.

Artificial silk may be distinguished from natural silk by the harsher, stiffer feel it possesses and also by its high luster. By experimental work, these differences are being lessened and the time will come no doubt when the fibers can no longer be distinguished by their outward appearance only. At present they can be identified by both microscopical and chemical means (1 and 11).

The tensile strengths of the different fibers might also be used as a means of identification. The following table shows the breaking strength in grams (12):

SILK		DRY	WET	REDRIED
Chardonnet.....	120 den.	42	0	95
Glanzstoff.....	130 den.	40	35	41
Viscose.....	120 den.	51	50	51.5
Viscose.....	200 den.	91	86	88

Viscose, at the time this table was made (1916), had a tensile strength about half that of real silk.

Another table, made in about 1917, gives the grams per denier as follows (2):

	GRAMS PER DENIER	
	Dry	Wet
Chardonnet.....	1.1	0.25
Lehner.....	1.4	0.36
Cuprammonium (Glanzstoff).....	1.3	0.5
Viscose, 1907.....	1.1	0.35
Viscose, 1913.....	1.4	0.55
Viscose, 1917.....	1.17	0.75
Natural silk.....	2.5	2.0

There is apparently no data available on the tensile strength of the finished fabric as purchased by the consumer. In a series of experiments performed by the writer, Baronette satin was studied. The particular sample used contained 47 cotton picks per inch and 166 viscose silk ends per inch (75.55% viscose silk and 24.45% cotton). The determination was made according to the standard method (13) and the following results obtained:

Tensile strength Baronette satin cut with woof of viscose threads

HEATED 2 HOURS AT 105°C.	WET	WET AND REDRIED
<i>lbs.</i>	<i>lbs.</i>	<i>lbs.</i>
113.50	23.0	96.50
112.50	22.50	95.0
114.50	22.25	94.50
115.0	22.50	90.0
115.50	22.0	93.0
114.0	22.25	92.25
116.50	23.0	94.25
113.50	23.0	94.25
114.50	23.0	93.0
117.50	22.50	91.0
Average. . . . 114.7	22.6	93.37

This data illustrates the decided reduction in strength when the fabric is wet or redried after wetting.*

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* Such properties as well as the resistance of the fabric to light, perspiration, and wear are of importance from a practical standpoint, and are being studied in this laboratory.

A CLOTHING PROJECT

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One of the criticisms raised against the classroom method of teaching clothing, especially in the teacher training classes, is that the students' needs are so carefully anticipated that she does not realize the pitfalls until she is thrown upon her own resources in teaching. This causes the young teacher to flounder because she lacks a clean cut point of view, and, in many cases, it lowers the standard of her work.

In a clothing class, which is based upon selection and design, a student should first, by guidance and analysis of designs, build up for herself a series of principles which should function as a basis for sound judgment in future decisions. She must formulate these principles independently after problems have been discussed; otherwise, they never become vital in her decisions. Second, she should build up a certain amount of accurate technique, a flexibility of method which will enable her to handle in an acceptable way almost any technical problem related to the work on which she has been given instruction.

In order to test these theories, it was decided to try, as a simple project, the making of a gingham dress, in a course in principles and practice in clothing construction and design. The project method had previously been discussed in the methods class. The instructor aimed to make the organization so simple as to suggest to the students a method of conducting a similar project with high school girls. The following outlines explain the method. Part I was prepared by the instructor. Part II was worked out by the instructor and the students during a lecture period. Part III was a brief examination, the results of which were tabulated and discussed with the students. Part IV was worked out by the instructor to guide the discussion of the students.

PART I. CLOTHING PROJECT

The project undertaken must be approved by the instructor. In planning the project, students should keep the following points in mind:

Place. The work may be done in the clothing laboratory or at home. The students must report to the instructor at least once a week.

Preliminary work. Dress designs, appropriate for the project, and approximate cost will be discussed with the instructor. The student will then make her own selection. She may model the garment, or use a commercial pattern, or a combination of the two.

Time. Six 2½ hour laboratory periods.

Report. A written report, following the outline provided, is due with the product.

PART II. REPORT OF PROJECT

1. Student's name.
2. Nature of the project. (a) Brief description of the person for whom made. (b) Type of garment and appropriate for what use. (c) Sketch of the dress. (d) Reason for selecting this design. (e) Sample of material stating why it was chosen.
3. Dates of beginning and ending of the project.
4. Actual number of hours spent on the project.
5. Plan of work. (a) Actual use of time on two days. (b) Number of consultations and with whom held. (c) Trips down town. (d) Itemized account on separate sheet. (e) Difficulties met and how solved.
6. Related subject matter used.
7. Evaluation of this experience in terms of personal gain.

PART III. EXAMINATION

Typical questions were as follows: Is this exercise a true project? Would you advise the continuance of this method of teaching, and, if so, would you suggest modifications? Is this method economical as to time? Is it possible to use this plan, with modifications, in high school teaching?

PART IV. DISCUSSION

1. Score card evolved by class for grading this particular project.

Score Card

- I. General appearance. Proportion (spacing, dark, light), line, color, silhouette, texture.
- II. Suitability for intended use. Suitability of material (spacing, line, silhouette, texture), suitability of color.
- III. Workmanship. Hems, seams, stitchery, pressing, other finishes—bindings, facings, fastenings, cordings.

Questions

Which dress seems most appropriate for the wearer?

Which dress fits the best?

Which dress will probably give greatest happiness for the longest time? Why?

Comments.

2. Criticism of dresses by class, according to score card.

3. Comparison of dresses with ready-made dresses of about the same grade as to design, quality of materials used, wearing quality, finish, cost.

4. Discussion of entire exercise as to consciousness of needs, with special reference to selection, design, technique; means by which an attempt should be made to meet needs; pleasurable features; general criticism of Part II.

The suggestions from this discussion influence the subject matter to be presented during the remainder of the course.

The results of this project were gratifying and illuminating to instructor and students. It is suggested that this method of vitalizing clothing work be used early in the course.

CHOOSING A LIFE WORK

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Forty years ago, south of Rector Street in New York City, there was but one woman employed in any office. So rare a thing was it to find a woman in that part of the city that the restaurants were not open to her and the lonely worker had to carry her lunch with her or go without. Even twenty-five years ago, institutions training for the few professions open to women were just beginning to stress the need of a college education as a required basis for the special calling. With these facts in mind, in this year of grace, 1922, Elizabeth Kemper Adams' book, "Women Professional Workers"¹ seems like an Arabian Night's Tale.

Representative occupations are scanned to determine whether or not they are worthy of being called professions. Professional people are officially in the public eye and are being judged. Women to be considered a success should raise the standard of their callings, constantly endeavor to improve themselves, increase the group spirit and ideals of brotherhood and disinterested service, and take an active part in associations of their respective professions. During the late war army officers

¹ Research Department, Women's Educational and Industrial Union, Boston, Mass.

were rated for intelligence, physical fitness, leadership, personal qualities, and general value in the service, and women could well develop similar standards in their work. Their future recognition depends largely on establishing, maintaining, and raising the grades of the professions in which they are engaged. Men have set standards for the learned and scientific professions, and women must not only live up to them but set equivalent ones in the newer professions. They must think clearly and honestly of the requirements of professional life and appreciate that they can receive recognition from their brothers only when they take a serious attitude toward all professions open to them.

Professions into which women are going. The professions open to women are grouped under the following heads: Learned Professions,—law, medicine, and the ministry; Health outside of Medicine; Food and Living; Community, Civic, Government, Social, Personnel, Industrial, Labor, Commercial, and Information Services; Art and Technical Professions; Library and Museum Work; Teaching and Education.

Law, medicine, and the ministry have long had the prestige of high ideals, careful organization, and standard curricula. Women are found in all of them but they have their greatest success in the newer social phases. In law, they are of value in problems of human relations and justice. In medicine they are efficient in institutions, in laboratory work and in scientific research. They look after the health of employes and are nurses in hospitals, dispensaries, baby hygiene depots, and in private and community service. The trained social worker, who can diagnose disease and use practical psychology in advice, is in increasing demand at the hospitals. A woman has been appointed on the medical faculty of Harvard and of Iowa State University. The higher ideals of the responsibility of the employer for the employe are bringing industrial health service into factories and department stores, and women are filling worthy positions. The ministry is also recruiting women with college training to conduct the social branch of the parish work.

Feeding, housing, textiles and clothing are tremendous businesses and professional women are being called to positions of responsibility and insight. Home economics is demanding new phases of training in business, industry, accounting, psychology, applied science and art, sociology, economics, labor problems and administration. Teachers are the most numerous group in this field but the profession is extending into civic agencies.

During the war the development of food production on an enormous scale led to new professions for women. They succeeded as producers on the farm as well as in marketing the product and in conduct of the canteen. The need for salvaging textiles and clothing demanded experts in these subjects. It was realized that food, clothing, and textiles are great public utilities and are intimately related to industry, health, thrift, and recreation. Local banks have opened rooms in which expert consultants trained in home economics can meet those who desire information.

Institution management and large scale food services are taking women into hospitals, university commons, and public institutions. Employers are utilizing college women to solve for them the problem of feeding large numbers so that efficiency is increased. Revolutions have come about in methods of service through cafeterias, and self-service and automatic restaurants. Hotels are also under women's guidance.

Municipal housing problems are open to those who are trained in social economics and city government. Community and social work are developing standards which are becoming professional. Community clinics for nutrition and information bureaus for food, clothing, and household matters are being conducted by professional experts. The States Relations Service of the United States Department of Agriculture and the Federal Board for Vocational Education have encouraged these movements and are employing college women with special training.

The business world is calling for the trained woman and, increasingly, for the college woman. She is found as a buyer of textiles and clothing, as an efficiency manager in ready-to-wear workrooms, as an expert designer of costumes, or as an adviser in the selection of merchandise for all departments of a retail store. Advertising and editorial work in both trade and household journals are in her hands. The "personnel" service is one of the newer fields.

Women are found in many phases of art as architects, musicians, painters, mural decorators, and designers. They are in moving picture studios and on the stage. They are doing artistic and skillful craft work in glass, metals, and textiles.

In the technical fields women are demonstrating that they can qualify for a high degree of efficiency. They are found in chemical and bacteriological, geological, and geographical laboratories; they are assisting in engineering, in mathematical astronomy, and in mechanical industries. They succeed as topographical draughtsmen. Statistical services are using women to conduct work in mechanical tabulations and statistical science.

Older professions for women, such as teaching, and library and museum work, are extending their former fields and offering new and interesting allied professions.

In this treasure house of guidance, deans, counsellors, and teachers will find material to direct intelligently those who come to them seeking to discover their life work. For all college women, questions are here set forth for solution that should be faced with a determination to raise the standard in all professions for women, intellectually, technically, and spiritually.

MARKET MYTHS

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Certain market myths confront every worker in market subjects with an enviable persistence. They are advanced wisely as original ideas, or they are referred to with an air of reverence, as shibboleths. They are on the tongues alike of the learned and the unlearned. Could these workers for better distribution coin slogans, fundamentally sound, that would take the same tenacious hold upon the minds and imaginations of the public, that alone would make their work constructive.

"The elimination of the middleman" is a process often commended, often urged. But is it possible? Is it desirable? Who are the middlemen? What work do they do or what functions do they perform? Middlemen include the country buyer in remote districts who buys the comparatively small quantities of many foodstuffs grown by the small farmer. Even he may not be able to accumulate a carload and so may be compelled to sell or consign to another dealer in a concentration point who can assemble the carload lots necessary for economical shipping over long distances. Then other middlemen must distribute these same products in wholesale and retail quantities in the consuming centers.

The warehousemen who store our food products from the time of harvest until needed by manufacturers or city families are middlemen.

The manufacturers who turn cattle into meat and grain into flour, and the bakers who turn flour into bread are middlemen. The whole-

sale dealers in the dense business areas of large terminal markets, the more accessible retail dealers, and the corner grocers are middlemen. Close study of the processes of marketing under our existing conditions, with large cities fed from remote producing areas, fails to reveal any one of these classes of middlemen who could be spared today without making the marketing process more difficult.

Under suitable conditions and circumstances, organizations of producers may be developed that can successfully undertake some of these functions, but it must be remembered that the functions are highly specialized. Conceivably, but not so certainly, organizations of consumers may be developed that can assume other of the necessary functions. The number of middlemen may be reduced, competition by hired intermediaries of associations may be introduced, improvement in methods may be brought about, and charges for certain services may be decreased, but the functions performed by middlemen cannot be eliminated unless farmers or city dwellers are willing to return to such operations as the grinding of their own grain and the baking of their own bread.

"Bringing producer and consumer together" is another favorite expression of the same general idea. For small quantities in small communities, well and good. Even large farmers' markets often prosper in large cities although there are always many thrifty farmers who find it more profitable to spend their time in production than in selling at retail, and some consumers who do not find it profitable to spend the necessary time in going to a downtown market when food can be bought from a dealer nearer home.

But what of the 12 million bushels of potatoes needed to supply New York City during one year? Should the growers from Maine to Florida, and the Great Lake States, attempt to carry these potatoes to the millions of New York homes that need them? Or will the New York families journey to those far-distant states for their potatoes? Even to go "up state," personally, for the family supply is out of the question. Limit New York City to the potatoes and other foods that can be grown on neighboring ground and it will be reduced to an immediate state of famine. By what imaginable process, then, can the mass of producers and consumers be brought together?

"Dumping to keep up price" is a not infrequent charge against dealers in food products. Not only has thorough search and investigation by trained workers failed to reveal actual proof of any such occurrence,

except in case of spoilage, but all reason is against it. Keeping up prices by such methods presupposes control of the entire supply of the product by a few individuals. Fresh fruits and vegetables move into markets from hundreds and even thousands of scattered growers and are handled by many dealers. Dumping by any one owner would obviously subject him to loss, and the slight price increase that might conceivably result would benefit, not the man who dumped, but his competitors. If each dealer dumped half his supply he might hope to double prices on the other half, but if anything like this was done everyone would know it and proof could be found on every hand. This probably is the most vicious myth of the market that plagues the public mind.

"Cost of production plus a reasonable profit" is frequently urged as the basis for price determinations. But what is cost of production? In the same neighborhood the efficient and experienced farmer on good land, with good equipment, may produce a crop at much less cost per bushel than his inexperienced neighbor, who works just as hard but perhaps with poor tools on poor land. Is the consumer ready to pay the ineffective producer a much higher price for his produce because he has unwisely spent much on its production? On the other hand if only the best land is utilized will there be food enough?

Efficiency is a threadbare word but it supplies the only hope of early improvement in our present food marketing situation. Increased efficiency in production, that is, the production of food at a low cost per unit, coupled with increased efficiency in marketing, with just compensation for services rendered and risks taken, constitutes the one promising program for improvement in the great business of feeding the nation. Progress in this program will come only as we work away from catchwords and set phrases and devote ourselves to clear and impartial analysis and unprejudiced and independent thinking.

HOUSEKEEPING ON A FARM IN NORTHERN SPAIN

In an interesting volume describing a journey through mountain regions of Northern Spain, seldom visited by tourists, Hans Gadow¹ gives much information about the food habits, cooking methods, and

¹ "In Northern Spain" by Hans Gadow (Adam and Charles Black, London, 1897).

other household customs of the farmer living there. He describes a farm house in the mountains remote from any large town where he and his wife found kindly hospitality and reasonable comfort.

The door of the farm house is protected by big stones, which are piled up to form a pair of steps, but so high and so slippery have they become through the constant traffic that they can be passed only with great caution. The entrance, rather a wide and dark passage, has no floor but the natural rock, made still more uneven by slippery cobble stones, which, unless gingerly stepped upon, allow the foot to jam itself into the intervening deep cracks, and this "pavement" is continued into a still more dangerous pantry. . . .

The "hall" is furnished with a bench, a few chairs, and a set of pitchers. A door on the left leads into the chief kitchen, a dark place, with the hearth, over which is suspended the kettle by iron hooks and chains, while from the ceiling hang hams and sides of bacon still curing in the rising smoke, which has blackened everything. . . .

To the right of the passage is the dwelling-house, with storerooms below, while above is a large room, *la sala*, with a small shuttered window, and a door, likewise shuttered, and leading out upon the wooden balcony which looks over the whole village and commands beautiful views. The furniture of the *sala*, the general dining-room, is very simple, consisting of a comfortable, high-backed bench, with the dining-table in front, another table, and several rush-bottomed chairs.

On the right side are two dark rooms, just large enough to hold one bed each, together with stores of butter and cheeses. The larger room on the opposite side was assigned to us. It might be called the study, for, besides a spare bed, the Sunday dresses of the family, and Don Prudencio's [the head of the house] gun, it was furnished with a table and drawers which held Don Prudencio's odds and ends, as, for instance, papers, writing materials, and a number of books. . . .

The fare at such a farm is frugal, and not much varied. Early in the morning comes the *desayuno*, or breakfast, literally the "disemptying," and this consists almost universally in Spain of a cup of chocolate. The chocolate is pounded in a mortar, and is made quite stiff and thick, so that it is not drunk, but ladled out with a piece of toast or some sweet biscuits. This is a very sustaining little breakfast, admirably suited to a hot country, and preferable to the pernicious habit of taking a glass of strong spirits. After a few hours' work some milk is taken, with bread and cheese, and towards noon follows the *almuerzo*, or lunch, of which boiled beans or chick-peas form the *pièce de résistance*, varied by potatoes, with a small piece of bacon. The much-decried garlic is not at all an unpleasant addition when used with moderation, and the same applies to the olive oil, provided this is not rancid, a drawback the frequency of which increases during the summer, before the

new oil is pressed out in the autumn. After the day's toil, at nightfall, is taken *la cena*, the meal, more or less a repetition of the *almuerzo*, but spun out to greater length, because on this occasion all the members of the family and the servants sit down together, while the other meals are often taken out of doors, in the fields, on the meadows, or in the woods, just as occasion requires.

The Spanish country-people are not great eaters; bread, an onion, and a piece of cheese, are often all that they take with them from early morning till evening, and wine is not a drink which flows freely in a farm of the Cantabrian mountains; it is supplanted by curds. A remarkable feature is the scarcity of meat. Pigs are reserved for the winter; goats are killed and roasted on the great feast days. . . .

Often the writer speaks of the Indian corn which he found growing in these Spanish mountains and mentions the use of cakes, i.e. bread, made from Indian corn meal as if it were used to a considerable extent. Much of the journey lay through high mountain valleys. Of one of these the author writes:

Rye is the common corn, while oats are rare. Wheat and barley appear lower down. Potatoes are good and plentiful. Indian corn does not ripen at this high level. Farther down it is of course grown extensively as food for man and beast. The bread made of this *milho* is rich, agreeable in taste, and wholesome, provided it is well baked; otherwise it is doughy and well-nigh indigestible. The homemade bread at Burbia—rye bread—is bad. . . .

Every household has its little garden, which, being carefully irrigated, as described before, and receiving a good deal of what would go into drains, if there were such things, produces plenty of beans and cabbages. . . . The principal meal, *la cena*, is taken between nine and ten o'clock at night.

Towards dusk Inocencia [wife of Romaldo, the owner of the farm where the author and his wife spent a considerable time] repaired to the room below our quarters to fetch several handfuls of dry cabbage leaves, which were lying there in a heap; butter and flour came from the same stores. Romaldo then cut the long stalks of the leaves into small bits and threw them into an iron cooking kettle, and when they had boiled for a good hour, some flour and fat were added. In another cooking vessel the potatoes were boiled with salt.

The supper being ready, Romaldo's family and field-labourers sat down on benches or logs of wood along the walls, the hearth with the kettle being in the middle. Everybody was supplied with a chunk of bread, and then Inocencia poured the cabbage-stew into the small *pucheros*, which were carried round by her and by Romaldo to the various people present, each person receiving a *puchero*, which they held on their knees, eating with wooden spoons.

EDITORIAL

The Demand for Health Workers. George E. Vincent, President of the Rockefeller Foundation, in his annual report forecasts the number of public health workers needed in the United States in the next ten years as approximately 20,000 persons. He says that there are 10,000 at present engaged in public health work in this country under federal, state, and municipal or county auspices. An equal number are working in one phase or another of preventive medicine in Great Britain. The number employed by non-governmental agencies of all kinds represents as many more. Health work in continental Europe is not so highly organized as in Great Britain, but here, as in many tropical countries, there is a growing demand for trained men and women in public health activities.

"Even a hasty glance at the gains which have been made in safeguarding human lives makes one realize how much of scientific knowledge, specialized skill, and organized capacity has been called into service," continues President Vincent. "The expanding idea of health is adding new types of technically expert individuals to the personnel of health work.

"The list now includes officers and chiefs who are in general charge, sanitary engineers, laboratory directors, specialists in statistics of birth, sickness, and death, field experts in the control of epidemics, administrators of clinics, hygienists for infants, medical inspectors of school children, mental hygienists and psychologists, leaders in health education for schools and the general public, visiting nurses, laboratory technicians, food and sanitary inspectors."

Home economics trained women are competent to engage in a number of phases of public health work. The emphasis, now placed on nutrition as one of the major aspects of all health teaching, affords them an opportunity to be of wide-spread service. Their training in the hygiene of clothing, in household and institution sanitation and cleanliness, in the sciences which are required in numerous lines of research in health problems, will enable them to join this increasing group of persons working for the public good from the preventive rather than the curative aspects.

The Campaign against Malnutrition. It sometimes seems as though people who discuss the nutrition of children are divided into two groups: those who are trying to wake the rest of the world to the consciousness of the need of studying and improving the nutritive condition of children, and those who radiate inhibitions, such as "there are no norms, no standard weight-height-age ratios; nobody really knows what malnutrition is, anyway; what is the use of a campaign? All you do is to produce a race of neurotic young persons who critically scrutinize their every mouthful, report all their good acts, and spend the rest of their days trying to bring up Father and Mother in the way they should go."

As a matter of fact, most of the people who carefully and accurately observe many children declare that too many of them appear to be undernourished, whatever the cause, whatever the strictly technical meaning of the word malnutrition, whatever the norm, may be. Most of these observers agree that something ought to be done about it.

A plan for doing something in an organized way in cities of 2500 to 3000 people, and in rural districts, is being prepared by the subcommittee of the National Child Health Council which has in charge the organization and conduct of nutrition work. The plan is still in tentative form, but it has been revised, after criticism and suggestion from a large number of the most experienced nutrition workers in the country, and it has been tentatively approved by the Advisory Council on Food and Nutrition. The plan is remarkable in scope, in comprehensiveness, and in good common sense; it is written and sponsored by experts. A clear and brief general outline includes *preliminary work* to arouse community interest in the malnourished child, to develop local leadership, to discover and make use of existing machinery, to make a survey to determine the size of the problem, and to obtain publicity and support for the campaign; *nutrition work in the school health program*, especially for preventive work; *facilities and methods for corrective work*; *means of maintaining the work*; *adaptation to rural conditions*. This outline is helpfully discussed in a foreword.

In connection with suggestions for a preliminary survey, causes of malnutrition are discussed briefly; some of them are more fully discussed in connection with points to be borne in mind by those in charge of nutrition work. These, and two definitions of malnutrition (one in the

foreword, page 1, and the other in appendix c, page 36) emphasize the point that malnutrition, if an entity, is not a sharply defined one; a conception that should be kept in mind by nutrition workers; a conception, too, that emphasizes the necessity, clear throughout the plan, of having, in the proposed campaign against malnutrition, close, organized coöperation of workers in many fields. Malnutrition is (1) a term commonly used to describe the condition of a child who is not developing properly; (2) a term commonly applied to a condition of general physical subnormality in children. Certain characteristic symptoms and pathological signs are present which indicate unmistakably that there is a lack of proper development. Among the causes are physical defects, habits, immediate environment; exhaustion or over-fatigue, improper diet, and faulty habits; improper breathing and posture; social conditions in home or community; water and milk supply; housing conditions, atmospheric contamination. Children, parents, teachers, doctors, dentists, nurses, social workers, nutrition specialists, all must coöperate in an organized effort if an efficient community campaign is to be launched.

Preventive work is to be done by extending health education in all schools, and including in this work nutrition teaching under the direction of a well-trained specialist. The organization of such work, and the place on the program for the midday lunch, and for the mid-morning lunch, are among the matters given consideration. In connection with corrective work, possible centers, necessary equipment, and staff of workers are considered, and methods of work, applied to children of pre-school age as well as to school children, are discussed most suggestively. There is need for pioneer work in discovering effective methods to use with children under six. In any case, the first step is a thorough general physical examination, the next, the correction of any physical defects found, then the grouping of the children who need special attention in classes of 15 or 20 for weekly meetings. The weekly determination and recording of weights, and the trimonthly determination of height are interesting and helpful to most children and their parents; they are criteria for judging progress. Granted that there are no reliable standards: call the values used for comparison merely tentative averages; still, a child whose weight is ten per cent under those averages for his height and age will generally be bettered by increased weight, provided that the increase is not "a gain in weight by any means," but is a gain made by obedience to the laws of health, cleanliness, rest, exercise, fresh air, and proper food. In the meantime, accumulation of data will improve our "standards."

It is planned to give home instruction or intensive work wherever either is needed, and to follow up the work after average weight is gained and the child leaves the class. But how one hates to read that "the child should be required to bring to the class a record regarding his meal times, the time spent at meals, hours for going to bed and getting up," and "a record of what he eats . . . for a week!" Such a record, if accurate, has an obvious value, but only the exceptionally skilled and sensible can handle so delicate a matter without offense against good taste and good manners.

The plan includes a description of charts, summaries, records, possible speakers, sources of material, organizations that may be useful, possible cost; an adaptation of the scheme to rural conditions which is not only valuable for its avowed purpose, but full of exceedingly valuable psychology which any nutrition worker should ponder. One is warningly reminded of the now historic "Government Lady," whom Anna Maria Sophia Jones (who was really nothing but skin and bones, if you remember her) found it necessary to silence with a hatchet, just because she lacked this sort of psychological knowledge.

If this brief discussion has given the readers of the JOURNAL any idea of the plan discussed, it will be evident to them that it not only provides a remarkably definite and valuable scheme for fighting malnutrition throughout the country, a plan approved and backed by most of the leaders in nutrition work from coast to coast, but that it most emphatically offers to the home economics women of the country an immediate extension of their duties and privileges. For several years we have been hearing from our leaders that we were at the turning of the ways; that a radical change in direction, method, and subject matter was immediately called for. In the duller of us, the result has sometimes been a mental condition resembling that of a certain class in psychology, in which the eminent professor used to say: "Yes; that is true. But it is not just what I have in mind. What is that, Miss X?" This plan focuses our gropings, as, indeed, not a few of our leaders have been trying to focus them. Here is one perfectly definite thing that we know needs to be done. To be sure, it can be done without us, but only with great loss of time and momentum. Home economics teachers are scattered rather thickly over the country. They ought to be available for a pivotal position in the great movement which this plan will surely stimulate. Are they prepared for it?

If the teacher of home economics is inaccurate, superficial, hazy in her knowledge of health; if she does not realize that she is only a small

part of the whole group engaged in this work, if she cannot work out her relation with social worker, doctor, nurse, grade-teacher, and the rest, the work will go on without her help. The campaign will then, for some time, at least, lose enormously, and home economics as a whole will have lost a tremendous opportunity.

If home economics women are to make the most of the opportunity, they not only should be nutrition experts in the actual campaign, but they should be prepared to teach the grade teachers what they need to know about food and nutrition in relation to health, and to plan suitable courses for all normal school teachers, for the plan demands that much of the preventive work shall be done by the grade teachers who must, of course, have specialists at hand to keep them up to date in these special subjects.

Many schools of home economics have, for some years, threatened to do just what we should do now: offer straight food or nutrition majors, revamping food courses so that their bearing upon health is constantly evident; giving more definite health teaching; offering more courses which can be taken by graduates to bring them up to date in subject matter and method and into line with this movement and others; above all, following up their alumnae, and helping them to find their right speciality and to go as far in it as they are able, thus training a large group of leaders in the many lines which constantly look to home economics women for leadership.

RUTH WHEELER,
The University of Iowa.

The Metric System. An organized attempt is being made to further the legal adoption of the metric system of weights and measures in the United States. This effort is largely the work of the American Metric Association in conjunction with the Metric Committee of the American Chemical Society. During the past year the Metric Committee has broadcasted information in regard to metric standardization through various scientific journals^{1,2} and through letter communications and questionnaires to colleges, universities, and technical firms. A copy of the Senate bill, "To fix the metric system of weights and measures as the single standard of weights and measures for certain uses," introduced last year by Senator Ladd, is to be found in *Science*.³

¹ *Science*, 55, 232 (March 3, 1922).

² *Jour. Ind. and Eng. Chem.*, 14, 332 (April, 1922), also p. 421 (May, 1922).

³ *Science*, 54, 628 (Dec. 23, 1921).

For teaching purposes in almost any scientific field, the metric system is in such constant and exclusive use that the proposed measure would be welcomed. However, in the world of trade the situation is not by any means so prejudiced in favor of metric units. Naturally a change, involving so much as the proposed one does, is receiving its share of criticism and opposition. To answer the objections of its opponents a "Summary of Arguments in Favor of Further Adoption of the Metric System" has been prepared by a special committee appointed by the Chamber of Commerce of the United States. The three sections of the summary quoted here indicate the convincing character of the whole.

"1. The metric system of weights and measures is now firmly established as an international system, either through its legal adoption, or its exclusive or permissive use for standards, by the principal nations of the world. Its more general use in the United States is therefore advocated to promote greater international uniformity, and in the hope, if that be accomplished, that other English-speaking peoples would follow the lead of this country.

"2. The basic simplicity of the system, with its few units, as the meter, liter, gram, with decimal subdivisions, makes both teaching and learning easy; and, in trade, makes billing and computation simple. During the period of transition, when for a time there would be more active dual relations than at present, conversion would be almost automatic through the use of tables of equivalents.

"3. The relative international popularity of the two major systems in use is shown by the number of nations which in recent years have adopted the metric system, while none has formally adopted the British-American system, although in population the two groups are about equal. (Since 1914, Poland, Latvia, Russia, Japan, Haiti, and Esthonia have become metric.)"

SYBIL WOODRUFF.

Maria Willett Howard Hilliard. "Miss Howard," as she was called during most of her professional life, was born in Braintree, Massachusetts. She received her formal education at Thayer Academy and at the Boston Cooking School, but all her life she kept the habit of study. After a somewhat varied teaching experience, she became an instructor in the Boston Cooking School which in the nineties supplied many teachers and workers of wide influence in domestic science. Later she was chosen its head.

In 1903 the Boston Cooking School was taken over by Simmons College, and in 1904 Mrs. Hilliard began her actual teaching there. She was largely responsible for planning and equipping its present laboratories, for establishing the Foods work in the Department of Household Economics, and for relating it to other subjects.

Besides her actual teaching she had a long and varied connection with the Women's Educational and Industrial Union of Boston, was a trustee of the Proctor Settlement, Proctor, Vermont, did war food conservation work under the National Civic Federation and through it organized the Boston Bureau of Household Occupation.

Mrs. Hilliard was a woman of wonderful personality; she was gentle, charming, gay, tactful, but forceful and plucky. She had a rare ability to arouse in all who came in contact with her an honest desire to do the best that was in them and to equip themselves successfully. Teachers who worked with her, students whom she taught and whose interests she shared, co-workers in anything in which she was interested, worked with a will, not consciously to please her but because the things she suggested and shared seemed right and good. She was particularly wise in securing the cooperation of others in adjusting the practical cooking of the older schools, in which she taught, to the more scientific attitude of a later day.

But that for which Mrs. Hilliard will be longest remembered was her unending helpfulness. Her real joy in life was in doing for others. In spite of frail health, tragic personal losses, and a busy life, she was always glad to see her friends, to talk over problems and accomplishments, and to give the helpful word or real service which would make them better and happier in their future lives. Truly she still lives in the men and women she has taught and cheered.

OPEN FORUM

Examinations in High School Food Courses. When the edict went out from the superintendent's office that thereafter semester examinations would be required in all high school subjects, the question at once arose as to what form the home economics examinations should take in order to be of any real value. The old memory questions over the subject matter were, of course, out of the question. However, it seemed worth while, first, from the standpoint of the students, to develop some

types of examinations which should genuinely test their ability to draw on the experience gained over a half year's work, in the solving of new problems. Second, such examinations might well prove a test as to how our own aims, so bravely set down on paper, were actually working out. We submit our plans for discussion.

Examinations in the ninth and tenth grades included both written and practical tests. The ninth grade course as a whole centers upon the needs of a hypothetical family in the community. The foods course is based upon meal planning and preparation for this family, involving the main factors of body needs, cost, time, and facility of preparation. The work of food preparation involves, besides the principles of cookery, the making and adaptation of "patterns" in place of recipes. The questions over this course were designed then to test the students' ability to think through some ordinary situations, forming their conclusions upon their experiences throughout the course. The following questions will serve as types:

1. Mary learned to make baking powder biscuits at school, using 1c flour. Supply the correct proportions of other ingredients. At home she found only sour milk. How could she change her pattern?

2. In the following sentences, underscore the words which make the statement true, giving a reason in each case.

a. Potatoes should be put on to cook in (hot, cold, boiling) water.

b. If I were buying meat for a stew, I would ask for (rib, porterhouse, plate, round).

3. Supply a salad appropriate for the completion of each of the following menus. Give reasons for your choice.

For practical tests over this course we give frequent home problems in meal planning and preparation. At first, the home problems are carefully planned with the teacher after the girls have consulted with their mothers. Later a girl makes her own plan and brings to the class a report of her problem which has been based in general upon the factors already given, but which must necessarily be adapted to her own family group. A note from the mother, often with valuable comments upon various phases of the girl's work, accompanies each report.

In the tenth grade we give another type of practical test. The course throughout the fall and winter includes the study of marketing and the complete responsibility for the school cafeteria. Each girl serves as student manager for a period of two or three weeks, working at first in close touch with the teacher, and, at last, using her experience gained in planning, buying, accounting, and general oversight, in assuming full charge for a few days.

In the spring the lunch room is closed, and each girl is responsible for the planning, marketing, and preparation of a series of meals at a certain cost. The students worked out a daily score card, scoring themselves as to menu, organization of work, housekeeping, flavor of food, serving, and hospitality. At the close of the series, summaries are prepared by the students, showing cost per person per meal, average cost per person, amounts spent for different classes of foods expressed in percentages of the total amounts spent for all food.

We believe that this type of examination, the combination of written and practical tests, has demonstrated the amount of usable equipment obtained by the student.

MARCIA ELIZABETH TURNER,
*Teacher Training Dept.,
Iowa State College.*

Table Service. During the past few years, and especially since the war, our high school and college courses in table service have been severely criticised. The criticisms have been just in many cases. The formal types of service have been taught to girls who have no waitresses in their homes and probably never will have in the new homes that they establish. If 95 per cent or more of American homes are without hired help, is it wise to spend all of the limited time devoted to table service on the serving of meals with a waitress?

Is any time spent on such service justified? And if so, how much? Nearly every housewife either gives or assists at formal meals or parties, helps with banquets or church suppers, or occasionally takes a meal at a hotel or large restaurant. At such times some knowledge of formal service is valuable. It gives poise and a feeling of ease which is essential to a gracious hostess, or a well bred guest. The question then remains, how much time should be devoted to formal serving? The old classical courses in table service in which meals were served *à la Russien*, English, and Compromise, are undergoing a metamorphosis. How much of these should be retained in our new courses?

At the practice meals served in connection with table service courses who should be guests? Should the class be expected to entertain any chance visitors to the school whenever they might come, or should an invitation come from the class when they are ready to extend such hospitality?

The tendency, too, is to invite outside guests only to the more formal meals, thus giving them an erroneous view of the kind of training the

class is receiving, and giving the class a wrong conception of the kind of entertainment that should be provided for guests. A certain doctor had evidently been entertained at such meals for he gave as the great benefit to be derived from home economics training that the girls would learn just what costume a maid should wear upon every occasion!

Any one interested in a course in table service planned with these points in mind, may have a copy by writing to the address below. Discussion and criticism will be welcome.

AMY BLOYE,
Purdue University, Lafayette, Ind.

Community Clothing Centers. For several years the Home Economics Extension Service in Pennsylvania has been studying the clothing problems of the women in the state. Our beginnings were through work with the girls and one- or two-day meetings among women, but these did not give time for the definite instructions needed. Last year we decided to try out a few clothing centers. These centers cover a period of two weeks of two sessions a day for at least five days a week, with five or six hours a day of supervised work. Two trained clothing workers are in charge, and the plan of the work is as follows:

The group contains at least twelve women who furnish the room, sewing machines, cutting tables, ironing board and irons, and their personal equipment.

The first problem is the fitting of a plain shirtwaist pattern. The women are divided into groups, and a fitting demonstration is given to each group, showing where the lines of a pattern belong and how to meet the individual differences in form. The women in charge are equipped with paper patterns in all the standard sizes so that each woman can cut the waist and two types of sleeve from unbleached muslin. They then work in twos, fitting each other according to directions given in the demonstration. This fitting is carefully supervised and no important step taken until it has been approved by the supervisor. All the fitting lines in these patterns are carefully marked. A waist can be cut and put together without fitting if these lines are followed. The women are taught how to use these patterns for underwear, plain shirtwaists, plaited and tucked waists, long-waisted dresses, and one piece dresses.

They then choose a garment to make which is suited to their individual ability and are shown how to take each step in making it. They are encouraged to bring in any individual problem. Some of the

types of garments, new and remodelled, and the demonstrations given in helping to solve problems may prove interesting.

Types of new garments: Underwear, shirtwaists, smocks, house dresses, gingham dresses, wool skirts, serge dresses, silk dresses, wool jersey dresses, wool jersey jumpers, children's clothes, underwear, dresses, coats, boy's suits, men's shirts.

Types of remodelled garments: Children's clothes made from adult garments, combination dresses from silk and wool dresses, wool dresses from old suits, one-piece wool dresses from old fifteen gored skirts.

Types of problems solved through demonstrations: Selection of material, selection of patterns, making of correct seams and seam finishes, hanging skirts, adjusting sleeves, making pockets for different garments, front, facing of middie and putting on collar, correct plackets, collars, simple decorations.

Each woman is given blanks to be filled out, one to be handed in at the close of the center, and the second after two or three months. By means of these we are keeping a record of work done at the centers and later work done as a result of the center.

This is a real piece of community work. One of the very gratifying results has been that the women have realized how much it means to get together and help each other. To date, more centers have been requested, by women of other communities who have heard of the work, than can be taken care of in a year with our present number of workers. Two of our workers have conducted clothing centers, meeting for an entire day once a week, on the same general plans as outlined above.

M. JANE NEWCOMB,
Pennsylvania State College.

BOOKS AND LITERATURE

The Newer Knowledge of Nutrition. By E. V. McCOLLUM. New York: The Macmillan Company, 2d edition, revised and enlarged, 1922, pp. 449. \$3.80.

This "rewritten" edition of "The Newer Knowledge of Nutrition" is one of several notable books on nutrition which have come from the press this year. One of the excellent features of the book is the comprehensive review of the experimental work undertaken during the past twenty years, from which has been evolved the biological method of food analysis to supplement chemical analysis. The author has traced the development of our knowledge of nutrition from the time when protein and calories were considered all sufficient, and when a "balanced ration" referred to the ratio between protein and energy producing foods, to the present, when a balanced ration includes not only protein of high biological value, but fine adjustments in the relative proportions of energy producing foods, protein, the inorganic elements, and essential vitamins. So admirable a treatment of the subject was possible only because of the author's wide and varied experience in nutrition investigations.

The first five chapters of the book cover the historical development of our knowledge of the nutritional requirements for growth and maintenance, as it has been derived from animal feeding experiments. Then follows a description of the dietary properties of many individual food stuffs, commonly used in the North Temperate Zone, the keynote of this discussion being the importance of using proper combinations of foods.

In the succeeding chapters, the experimental evidence is presented, establishing a causal relation between the so-called deficiency diseases, xerophthalmia, beri-beri, and scurvy, and a lack in the diet of specific chemical substances which are commonly designated as fat-soluble A, water-soluble B, and water-soluble C. The meager facts known concerning the chemical nature of these substances are also included. Pellagra and rickets, the two other diseases in which a

defective diet is incriminated as a causal factor, are described in detail. A summary of the voluminous literature on rickets, in particular that of the past two or three years, is to the writer of this review one of the most interesting chapters of the book.

"The Newer Knowledge of Nutrition" is of special value to Home Economics teachers because it makes the application of laboratory experience to practical dietetics. In the final chapters the author emphasizes the necessity of making nutrition one of the major aspects of all health teaching.

From his study of dietary habits of various groups of people, he is convinced that there is a relation between quality of the diet and physical excellence of the people. The author has accumulated considerable evidence to support his claims that lowered resistance to infections, lack of vigor, and defective bone and tooth formation, are frequently sub-acute forms of the "deficiency diseases."

ELIZABETH W. MILLER,
Iowa State College of Agriculture.

Health Education and the Nutrition Class. A Report of the Bureau of Educational Experiments of New York City. Descriptive and Educational Sections by JEAN LEE HUNT, Studies of Height, Weight and Mental Measurements by BUFORD J. JOHNSON, Report on Physical Examinations by EDITH M. LINCOLN. New York: E. P. Dutton & Co., 1921, pp. 281. \$3.50.

This book is frankly a detailed description of the methods employed and results obtained in a limited experiment at Public School Number 64, Manhattan, "to determine how far a school can successfully employ the nutrition class procedure, and in particular how far the procedure itself can be expected to reinforce the school's general program of health education." It is not a book that carries us from page to page with wrapt interest but demands strict attention to follow its data and conclusions. Those who are especially interested in the nutrition

problem will find this piece of research stimulating.

The concluding chapter on "Interpretations and Recommendations for an Educational Program" will bear reading by all those who are struggling to perfect a health education program for the school child. The authors stand firmly for a positive health program and state "that health education must be rendered susceptible of evaluation is the challenge of the nutrition class to the school."

From their studies the following conclusions are reached:

"Gains have been largely dependent on initial physical status and proportionate to the relatively superior or inferior condition of the individuals considered.

"Gains have been largely influenced by the technique employed for enlisting cooperation from the children.

"Other conditions being equal, gains have been in direct proportion to the influence exerted on the home and the resulting parental cooperation.

"Gains appear to have been appreciably increased when favorable conditions directly affecting the nutritional processes have been introduced within the school environment."

A very important point considered in the concluding chapter is that of the community program for health education. "The success of the school program of health education is dependent on a serious program of education in the community." This book, together with several others along the same line which have recently appeared, affords us considerable valuable data upon which we should be able to rear a more enduring structure of health education.

RICHARD A. BOLT, M.D.,
Amer. Child Hygiene Assn.

Quantity Cookery: Cooking and Menu Planning for Large Numbers. By LENORE RICHARDS and NOLA TREAT. Boston: Little Brown & Co., 1922, pp. 200. \$2.00.
Perhaps there is no subject about which there has been so little written, and yet there are few subjects for which the demand for

information is so great, as the subject of quantity cooking, and institution management. The institution administrators of the country should welcome this book as a valuable addition to their working libraries, for it is practical and deals with subjects which come into the everyday life of every institution.

The first chapter deals with the principles underlying the planning of menus for large numbers. Many practical suggestions are given for the planning of menus for cafeterias and tea rooms, and a helpful list of foods is given for menu making. There are also seasonal charts of food for winter, spring, summer, and fall. These charts are altogether a new idea for cook books designed for feeding large numbers of people.

Suggestive and popular food combinations are presented. The methods of using leftovers, meats and vegetables, dairy products and eggs, breads, fruits, and jams, will appeal to a large number of our institutional workers, especially to the superintendents who are always concerned with the problem of waste. Take, for instance, the bread waste, the bread crusts, the dry bread which is left over. The suggestions in this book along that line should be very useful to many of the dietitians who are serving large numbers of people.

Catering is not forgotten. A practical form for taking catering orders is given, and there is suggested a well organized plan of procedure which should be a guarantee of satisfaction to guests and to the catering department.

Over one hundred pages are devoted to recipes for institutional use. The number of servings and the amount per serving, which is valuable information to be attached to an institutional recipe, are also indicated.

The last chapter of the book deals with the table of weights and measures.

Taking the book altogether, we term it a practical, usable book, a valuable contribution to the meager institutional literature.

MABEL C. LITTLE,
University of Wisconsin.

School Needlework. By OLIVE C. HAPGOOD. Revised and largely rewritten by Ella J. Spooner. Boston: Ginn & Company, 1922, pp. 151. \$.84.

This book was first copyrighted in 1892. The present edition has been very largely rewritten and rearranged.

Although originally planned as a course of study in sewing, in this new edition "no attempt is made to offer a course in clothing. It is assumed that the course for the school is prescribed with the desired emphasis on selection, cost, and suitability of clothing.

. . . . This book has a different purpose. The experienced worker often forgets the many stages through which the beginner must pass in the learning process and the help that is needed along the way. It is with these details for the beginner that this book has always been concerned."

There are chapters devoted to tools for sewing, stitches used in plain sewing, ornamental stitches, processes of construction, mending, the sewing machine, suggestions for application of stitches and construction processes in making simple garments, some notes on cloth and tools carried over from the supplement of the original teacher's edition, and an index.

The subject matter has been brought up to date and some new material has been added. This includes the chapter on the sewing machine which is as complete as any discussion of this topic to be found in clothing texts but which is not illustrated. The garment construction section is also new and includes new problems and directions for simple drafting of the patterns to be used.

Inasmuch as no attempt is made to outline a course of study, a logical, rather than a psychological, arrangement of contents has been followed. New and up-to-date illustrations would have added considerably to the attractiveness of the book.

ETHEL L. PHELPS,
University of Minnesota.

Health in Home and Town. By BERTHA M. BROWN. Boston: D. C. Heath & Co., rev. ed. 1922, pp. 326.

The revised edition of this book is practically the same as the original publication in

1912. Indeed it is so nearly the same, that the index still refers us to p. 297 for a discussion of the license system, which is the only topic dropped out in this issue of the book. There are but five additions, and no replacements in the reference list of books for teachers despite the very productive years from 1912 to 1922. There are no changes in the text until p. 296, when two pages devoted to the old license system are replaced by an equal amount of space given to prohibition. Then follow thirteen new pages of text, which complete the revision changes made; these are devoted to the recent health movements, including such topics as school clinics, medical inspection, malnutrition, and the girl and boy scout organizations none of which are considered of sufficient importance to be included in the index!

There are certain corrections which should appear in a 1922 text: these include an up-to-date discussion of pasteurization of milk (p. 172), the omission of the inefficient household charcoal filters (p. 195), an increase over 1912 in the rent and building rates, a substitution of chemical for electrical methods in the prophecy concerning water purification, and the newer methods of disease prevention, especially toxin-antitoxin treatment for diphtheria.

There are, however, many good things true of this text. The type and paper are good, the illustrations are varied, and the text includes a rich variety of topics of interest. The author has the power of briefly describing situations or processes in a way that compels visualization.

JEAN BROADHURST,
Teachers College, New York City.

Talks to Mothers. The Maternity Center Association, 370 Seventh Ave., New York City, announces the publication of a series of twelve "Talks to Mothers" for the benefit of women in all parts of the country. This is an attempt to undertake on a national scale to impress women with the vital importance of complete maternity care.

The scope of the pamphlets is suggested by their titles: "Life's Richest Offering," "A Message to Husbands and Wives, too," "The Growing Life," "Keeping up Appear-

ances," "Watch for Nature's Signals," "Preparation for the Newcomer," "Getting Ready for the Great Event," "The Day your Baby Comes," "The Lying-in Period," "Starting Baby Right," "After care of the Mother," "The Foundation of Child Life."

It is planned to distribute the pamphlets to a great extent through nursing and public health organizations which are closely in touch with local conditions in their own communities. One set, postage prepaid, 25 cents, 50 sets \$10.00. Special rates for larger orders.

An Extension Course for Homemakers. An article compiled by Bess Smenner as part

of her research work at Teachers College has been added to the "loan" papers in the JOURNAL Office. It outlines in detail a course in selected units and includes a bibliography and sources of illustrative material. It will be loaned on receipt of 10 cents.

Stored Food Record. Blanks for recording stored food in the home have been prepared by Lottie Milam, Montana State College, Bozeman. The cards are intended for use in keeping a record throughout the year; as an indicator of the amount of home grown and home canned or cured foods as compared with those purchased; and as an analysis of the diet of the family.

PAMPHLETS RECEIVED

Issued by the U. S. Department of Agriculture:

- American Moles as Agricultural Pests and Fur Producers.* Farmer's Bull. 1247.
The Boll Weevil Problem. Methods of Reducing Damage. Farmer's Bull. 1262.
The Care of Leather. Farmer's Bull. 1183.
Meade Cotton an Upland Long Staple Variety Replacing Sea Island. Bull. 1030.
Methods of Manufacturing Potato Chips. Bull. No. 1055.
The Preparation of an Edible Oil from Crude Corn Oil. Bull. 1010.
Relation of Initial Temperature to Pressure, Vacuum, and Temperature Changes in the Container during Canning Operations. Bull. 1022.
Self Service in the Retailing of Food Products. Bull. 1044.
Sewage and Sewerage of Farm Homes. Farmers' Bull. 1227.
Status and Results of Boys and Girls Club Work. Northern and Western States. Dept. Circ. 192.
Studies on the Clarification of Unfermented Fruit Juices. Bull. 1025.
Volume Variation in Bottled Foods. Bull. 1009.

Issued by the Department of the Interior, Bureau of Education:

- Equipment and Rooms for Home Economics Departments.* Home Economics Circ. 11.
Preparation of Teachers of the Social Studies for the Secondary Schools. Bull. 1922, No. 3.
Present Status of Home Economics Education. Home Economics Circ. 10.

Issued by the U. S. Department of Labor, Children's Bureau:

- Child Labor and the Work of Mothers in Oyster and Shrimp Canning Communities on the Gulf Coast.* Bureau Publication No. 98.
Industrial Home Work of Children. Bureau Publication No. 100.
Promotion of the Welfare and Hygiene of Maternity and Infancy. Bureau Publication No. 95.

Issued by the U. S. Department of Labor, Women's Bureau:

- Negro Women in Industry.* Bull. of the Women's Bureau, No. 20.
Women in Georgia Industries. Bull. of the Women's Bureau, No. 22.

Issued by the publishers listed:

- The Acid-Base Balance in Animal Nutrition. III. The Effect of the Addition of Alkalies to the Ration on the Growth and Well Being of Swine. Further Data on Acid Feeding.* Iowa Agr. Expt. Sta. Res. Bull. 71.
- The Child's Day.* By Mary Swartz Rose and Geraldine Gorton. Technical Education Bulletin, No. 40. Teachers College, Columbia University.
- The Colorimetric Hydrogen Ion Determination as a Means of Studying Biological Changes in Dairy Products.* Mich. Sta. Tech. Bull. 52.
- Does Carbon Dioxide in Carbonated Milk and Milk Products Destroy Bacteria?* Illinois State Circ. 256.
- Equipment for Teaching Home Making in Texas High Schools.* By Jessie W. Harris. Bulletin 149. State Board for Vocational Education, Austin.
- Good Teeth.* U. S. Public Health Service. Reprint No. 707 from the Public Health Reports.
- Historic Costumes.* Dry Goods Economist, 239 W. 39th St., New York City.
- Home Economics Extension Service in Illinois.* By Juliet Lita Bane. Circ. No. 248. University of Illinois, Urbana.
- Hospital Administration and the Training of Hospital Executives.* Report of the Committee on the Training of Hospital Executives, 22 East Ontario St., Chicago.
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NEWS FROM THE FIELD

*To the Editor of the Journal of Home Economics,*¹

I am sure that a valuable contribution of the knowledge concerning vitamins could be made from Australia. We have in certain dry parts, where small attention is given to vegetable growing, a peculiar form of scurvy. Very little teaching is given on preventive measures and very little investigation is done, yet I believe that our doctors, if communicated with, could make some interesting revelations.

The need for the trained home economics woman is tremendous. Our country hotels have steadily deteriorated since the limitation of drinking hours has forecast their abolition, and wage setting for the various classes of waiters, maids, and other help has reduced the staffs. As there are seldom other places than the hotels where one may stay overnight the public is discontented and grumbling. The Irish have chiefly been in control of the hotels, but for meals the Italian and Greek shops are taking their place. As these latter are conspicuous for careless methods and doubtful cleanliness, the public is not much better off. There is a big opening for respectable, well organized hotels or boarding houses all over the country but especially on the better known motor routes. I have been on trips where we never got a clean, wholesome meal except those we cooked by the roadside.

Here is a golden opportunity for the home economics expert who wishes to spend a profitable holiday. She could do much in six months and, if given a few letters, she could be put in the way at once. We are absolutely at zero in the knowledge of home economics and it is no easy task making a start.

The International Association for the Promotion of Child Welfare has recently been established in Brussels. The object is to centralize all documentary research work bearing upon Child Welfare. The Association has started the publication of a monthly review, *The International Record of Child Welfare Work*, which will publish articles on all questions of general or international importance relating to Child Welfare, will keep its readers abreast of the transactions of the various national and international congresses dealing with this subject, and of lectures and conferences relating thereto. The Association also intends to publish, in supplementary form, all legislative measures, affecting Child Welfare, adopted in every country throughout the world. The *International Record* will be published in English as well as French.

The Association of Teachers of Domestic Science of England. The annual meeting of this association was held at Crane Hall, Liverpool, May 27, Eleanor Rathbone, President, presiding. Guests were formally welcomed by the Lord Mayor of Liverpool. Miss Rathbone made an

address on *The Relation between the Economics of the House and of the Nation.*

Helen Atwater and Emma Winslow of the American Home Economics Association were asked to speak at the conference but neither was able to be present.

Dr. J. L. Paton, High Master, Manchester Grammar School, talked on liberal and vocational education. Miss Denmark, of The County Secondary School, Streatham, London, gave the results of a year's experience of the Dalton plan. Florence H. Laverock of the Department of Education, Liverpool University, talked on Colour and Colour Schemes.

Trips were made by the visitors to Domestic Subjects Centers of Liverpool, the Training College for Teachers of Domestic Science, the Nursery Training College, and other institutions of special interest to them.

The association publishes the *A. T. D. S. Magazine*, which gives news notes of district associations, and discussions of questions relating to the work of the Domestic Science Mistresses.

¹Extracts from a letter from Ruth Beale who is trying to establish a School of Home Economics at Sidney University.

The American Dietetic Association is to have its annual convention in Washington, D. C., at the New Willard Hotel October 16th, 17th and 18th and on October 19th, a day's visit and program have been planned in Baltimore at Johns Hopkins Hospital for those who wish to visit this interesting city and famous hospital.

The program for the meeting is not complete as yet. However, those speakers who have consented to be on the program are as follows: Dr. J. P. Watson, Psychologist, Dr. Elliot P. Joslin of Boston, Miss Emma Gunther of Teachers' College, Columbia University, Mrs. Mary D. Bryan, President of the American Dietetic Association, Mrs. Agnes O'Dea, Johns Hopkins Hospital, Miss Breta M. Luther, Cook County Hospital, Dr. Ruth Wheeler, Professor, Nutrition, Iowa State Medical School, and Mrs. Laura M. Piper of New York. Major Stimpson will be among the speakers on the first day.

On Tuesday: Dr. Alfred Hess of New York, Miss Stewart, assistant dietitian, Ann Arbor Hospital, Dr. Leroy E. Parkins, assistant superintendent, Peter Bent Brigham Hospital, Mr. Henry C. Wright of New York, Mrs. Mary Swartz Rose of Teachers' College, Columbia University, New York, Miss L. Ray Balderston, Teachers' College, Columbia University.

On Wednesday: Miss Ida Cannon of Boston; Miss Lucy Gillett of New York; Miss Louise de Plante of Philadelphia; Dr. Walter Cannon, Professor of Physiology, Harvard Medical School, Boston; Miss Lulu Graves, Superintendent, Dietary Department, Mt. Sinai Hospital, New York; Miss Marjory Hulsizer, Dietitian, Barnes Hospital, St. Louis, Mo.; Miss Daisy Treen of the Women's Educational and Industrial Union, Boston; and Miss Mary Lindsey of the Grace Dodge Hotel, Washington, D. C.

Thursday in Baltimore: Dr. E. V. McCollum of Johns Hopkins Hospital and Dr. William S. McCann of Johns Hopkins.

A number of special features are being planned this year. The Washington dietitians are arranging for some trips and social events and one evening of the meeting will be especially interesting as it will be an "all-member" program.

The American Child Hygiene Association will hold its annual meeting in Washington, D. C., October 12 to 14. This will give

an opportunity for the members of the American Dietetic Association to attend both conferences.

A Pupil Dietitian's Course is now offered at Walter Reed General Hospital, Washington, D. C. The course covers a period of six months, during which time the pupils are given practical experience in the various messes and in the laboratory. The lectures for the Army School of Nursing, beginning October first, are open to the students. Among these lectures the courses in Diet in Disease, Physiology and Anatomy, Communicable and Occupational Diseases will be found of especial value and interest.

Those entering at this time will be given an opportunity to attend some of the meetings of the American Dietetic Association which holds its annual convention in Washington October 15-18. Arrangements will be made for pupils to visit the various bureaus of interest in the Department of Agriculture, as the Bureau of Chemistry, the Bureau of Standards, and the Office of Home Economics.

Quarters, subsistence, and laundry are furnished, and a nominal salary of fifteen dollars a month is paid.

An outline of the course and application blanks will be sent upon request.

Ceramic Research. A new ceramic laboratory, in which investigative work regarding the clays of the Northwest will be conducted, is to be installed at the Northwest Experiment Station of the United States Bureau of Mines on the campus of the University of Washington at Seattle.

A coöperative agreement has been effected between the United States Bureau of Mines and the Central of Georgia Railway for an investigation by the Ceramic Experiment Station, Columbus, Ohio, of the white clay and bauxities through central Georgia along the railroad right-of-way.

Preliminary tests on the effect of low calcination temperatures on the colloidal content of Georgia white clays have been made. By calcining Georgia clay to from 500° to 600°C. the adsorptive properties were reduced to those of the English china clay, without materially reducing its plasticity.

A microscopic examination of the mineral constituent of kaolins is being conducted at the Ceramic Experiment Station at Columbus.

CONNECTICUT

State Agriculture College. Home machinery and equipment, and the home management problem were discussed at a four-day conference held June 19-22, and attended by home demonstration agents, state extension directors, leaders, and specialists from Massachusetts, Rhode Island, and Connecticut, and by representatives from New Jersey, Vermont, and the Washington Extension Office.

Professors Robb, Gunness, and Knipe, professors of rural engineering at Cornell, Massachusetts Agricultural College, and Connecticut Agricultural College, respectively, were in charge of that part of the program devoted to systems of running water, sewage disposal, heating, and lighting in rural homes, and to practical demonstrations of power and hand machinery and equipment. Prof. W. W. Chenoweth of Massachusetts Agricultural College lead a discussion of the pressure cooker, its value, and its use in canning and in cookery. Demonstrations, exhibits, and moving pictures added greatly to the value of the discussions.

Subject matter and methods were emphasized on the program. A discussion of the unified program in extension work, signalized as the outstanding development of the year, was opened by Florence E. Ward of Washington; Mrs. Frank J. Haynes of Massachusetts presented a state project in household management as part of this unified program; Eleanor Moss, Litchfield County, Connecticut, represented the county part in the program; and Mrs. Walpole of Rhode Island showed how it functions in the home. Agnes Harris of Washington summarized the progress of the project in the United States. Directors Willard of Massachusetts and Baker of Connecticut summarized the discussion of the unified program for extension work and the part of each agency in its success.

Estelle Sprague, state leader of home demonstration work in Connecticut, Lucille

Reynolds, state leader in Massachusetts, and Director Baker of Connecticut presided at the various sessions.

This conference reflects the growing interest in home management as a basic family project.

GEORGIA

The Georgia Home Economics Association held its annual meeting in Columbus, April 20-22. Among the speakers on the program were Helen Louise Johnson, who discussed *The Present Day Distribution of the Family Income*; Clyde Schuman, who outlined the Red Cross Nutrition Program; and Ada Field, Peabody College for Teachers, who discussed *Applications of Recent Scientific Investigations to Home Economics*.

The plan of affiliation with the American Home Economics Association was presented by Miss Field, who is a member of the council of the national association. A committee was appointed to revise the constitution in accordance with the requirements for affiliation.

Epsie Campbell, State Supervisor of Vocational Home Economics, in giving the report of the field work committee of which she is chairman, outlined the aims and idea for the teaching of home economics in the state.

The officers of the association, reelected for another year, are as follows: President, Julia Robertson, South Georgia Normal College, Valdosta; Vice-President, Lois Dowdle, State College of Agriculture, Athens; Secretary, Clara Lee Cone, Girls High School, Atlanta; Treasurer, Bess Baird, State Normal School, Athens.

ILLINOIS

Illinois Home Economics Association. Plans are being made for the second annual meeting which will be held in Decatur, Friday and Saturday, October 27 and 28. This is following out the suggestion made at the time of organization last fall that meetings should be held alternately in Chicago and in some city in the state at large.

KENTUCKY

A State Teachers' Home Economics Conference was held at the University of Kentucky under the auspices of the Department of Vocational Education, June 15-21. Betsey Madison, Mabel V. Campbell, and Maybelle Cornell had charge of the sessions dealing with the organization of courses of study in home economics and related science and art for the grades and high school, considering the following points: time allowance, aims, suggested units to be offered, content of each unit, home work, references, illustrative materials, and special methods or devices.

A Clothing Project. As part of their class work, the girls in the high school at Ashland, with the assistance of their instructor, Mrs. Carrie Baskerville, made a complete outfit and additional articles for a little girl in a poor family, and a layette for a baby in the care of the public health nurse. The girls made over their own clothes, and bought new materials with money they contributed or solicited.

NEBRASKA

The College of Agriculture, University of Nebraska. "Farmers Fair" is an annual event planned and carried out entirely by the students of the College. They aim to show, through exhibits, demonstrations, and entertainment, the work of the College to the visitors who come from all parts of the state.

The students in home economics prepared exhibits in foods, clothing, and design. A style show put on by the clothing division was given as an afternoon party. Students in the millinery classes demonstrated the making of hats, and the finished products of the students were tastefully exhibited. The students in the design division demonstrated the refinishing of old furniture, and arranged a long narrow room to illustrate the possibilities of changing the appearance of the room by a correct arrangement of furniture and furnishings. The foods division exhibited a week's food requirement for a family of five. Visiting children were weighed and measured by the nutrition division, and a group of little

children entertained the visitors with health verses and exercises.

In the afternoon and evening the home economics students presented a pageant play of the old fairy story "The Sleeping Princess." The costumes and all accessories of the pageant were made by the classes in the department.

During the first semester of summer school, the following courses were offered in Home Economics: Clothing Study, Millinery, Buying and Selecting Textiles, Clothing Design and Economics, Art Structure, Home Decoration and Furnishing, Related Science Methods, Food Economics, Home Management, Home Agriculture, Home Management House Residence, Newer Methods of Teaching Home Economics.

Boys and Girls Clubs. Two hundred and eight members of clubs from all parts of Nebraska spent a busy week May 29 to June 3. Most of these boys and girls had won prize trips as county champions in pig, corn, canning, and other clubs.

The mornings were spent in studying various lines of work, such as birds, bugs, weather, stock judging, poultry, and personal hygiene; the afternoon in making industrial trips to various institutions and business houses. The Lincoln Chamber of Commerce gave a banquet to the club members and leaders, and the Nebraska Farmer gave them a picnic supper and radio concert. They spent the last day in Omaha where they visited the stock yards and enjoyed a banquet served at the Stock Exchange. The Omaha Chamber of Commerce provided street cars to take all the boys and girls to the Union Pacific Shops and to the Iten Biscuit Company.

One of the interesting features of the week was the contest between the ten groups who put on demonstrations of club business meetings. The first prize was awarded to the group who gave a pig club business meeting such as would be held in August when the clubs were making their plans to attend the State Fair.

Nutrition Work. Dr. Hedger comes to Nebraska in October and will visit seventeen counties, giving in every county at least one

lecture demonstration on Malnutrition in Children. Underweight children will be examined, the daily activities will be talked over with the parents, and suggestions will be given as to the care of the children for normal development. To prepare the counties for this work, the Nutrition Specialist and the Health Specialist of the Extension Service are visiting the counties at least twice before Dr. Hedger's coming. Nutrition slides are shown which contain pictures of Nebraska boys and girls who have gained health by nutrition work already done in the state. Dr. Hedger's score cards are being used with success.

Nutrition Institute. Under the direction of Dr. Wolfe of the Lincoln Public Schools, Dr. Emerson held an Institute for two weeks during July. About eighty teachers and nurses registered for this work. Five clinics of twenty children each were started for Lincoln's underweight children.

The Annual State Conference of Vocational Home Economics Teachers was held May 29 to June 2. Thirty home economics teachers attended the conference. The general theme of the conference was the means of developing greater cooperation between the mother and the teacher in the teaching of homemaking. Fannie Sims, Head of the Department of Home Economics, University of South Dakota, spoke to the teachers on How Can Related Art be made to Contribute more Vitally to Preparation for Homemaking? L. A. Hartley, State Supervisor of Industrial Education, explained his method of analysis and synthesis of teaching content and showed how it may be applied to homemaking.

Nebraska Home Economics Workers attending Columbia this summer are Rose Shonka, Supervisor Home Economics, Lincoln Public Schools; Mrs. Kate Kinyon, Acting Supervisor Home Economics, Lincoln Public Schools; Gladys Legg, Clothing Specialist, Extension Service; Alice Bradt, Head of Design Division, Home Economics Department, University of Nebraska.

NEW ENGLAND

At the Boston Meeting of the N. E. A. there were three sessions of special interest to

Home Economics people. The formal session of the American Home Economics Association, arranged by the New England Home Economics Association, was held July 5. The general subject of the program was The Relation of Home Economics to the Rest of the High School Program, and two phases were presented: The Responsibility of Superintendents and Principals, by George A. Works; The Responsibility of Supervisors and Teachers, by Edna White.

Prof. Works pointed out the necessity of having principals and supervisors who realize the value of home economics and also of having definite aims in our home economics courses as well as a "comprehensive and thorough preparation of teachers who will be able to teach in the light of these aims." Miss White indicated a tendency on the part of the home economics teacher to confine her interest too narrowly to her own group of students, whereas she should "remember that her greatest service may be in the courses adapted to the needs of the general student group, many of whom may be specializing in very different fields. She must not fail to appreciate the opportunity to give them a greater interest and understanding of home problems as well as a broader vision regarding them."

The discussions showed that there is a real appreciation of the fact that the Association and all persons who believe that home economics has a place of importance in the school program must adopt a more active attitude.

Mrs. Calvin called a conference for the following day which met at Simmons College, to consider the recent report of the N. E. A. Committee on the Reorganization of Home Economics in Junior High Schools.

One session of the Child Hygiene Division was devoted to the place of nutrition in the health education program. The speakers were Dr. Howe of the Forsythe Dental Infirmary, Dr. Blood of Simmons College, Mary McCormick, Nutrition specialist for New York State, and Minnie Murphy of the Elizabeth McCormick Memorial, Chicago.

Simmons College. To meet the requirement or trade experience for vocational teachers, Miss Spooner is trying this summer

the experiment of teaching dressmaking by shop practice. The plan is to offer, to trade people and teachers of sewing, shop experience under conditions more favorable than those of regular business houses. Orders are taken and work is planned as nearly as possible as in any shop, with this difference, that each day there will be one hour of lecture and demonstration by the instructor. The shop is in charge of Beatrice O. Brown, sketcher in the Design Department of Wilkin and Adler, New York City.

NEW MEXICO

Homemaking in Vocational Classes for Spanish American Women. The recent closing of the evening class in homemaking, conducted by Mrs. M. M. Leibold at Santa Cruz, marks the end of a remarkably successful period of instruction. Mrs. Leibold has to her credit 74 lessons. Instruction was given two evenings a week, each lesson being at least two hours long.

The instruction in homemaking was divided into short unit courses in canning and food preservation, elementary sewing and textiles, elementary food study and cookery, food values and requirements, house care, advanced cookery, advanced sewing, care and repair of clothing. Much of the work in food preservation was entirely new, drying being the only method of preservation hitherto used.

"When we arrived, there would be all the women in the neighborhood, gathered to watch the process" said Mrs. Leibold, "and there would also be all the kettles, pans, and utensils in the neighborhood, borrowed for the occasion. Along with the canning, it was essential to stress the need of absolute cleanliness. Most of the women wear the traditional black shawl. They watched, wide-eyed, the operations of the white-aproned class."

The food study and cookery were necessarily adapted to the conditions and materials at hand. Even thus restricted, much was accomplished. The work in sewing was adapted to the simple needs of the class. As the school authorities had set aside no sum for supplies, the materials were donated by

pupils, by public-spirited citizens, and by the instructor.

This is the first work of its kind that has been given in the community. Its success is established. The demand for it is steadily increasing. Mrs. Leibold, who is also principal of the Santa Cruz public school, has the largest enrollment on record, and the people of the community have petitioned that she return next year and continue the work.

NEW YORK

The First Annual Exhibit of Women's Activities will be held September 18 to 23 at the Hotel Commodore, to present to the public the products in which women's activities have played a conspicuous part. The exhibit will be under the auspices of the New York League of Business and Professional Women. The plans contemplate an extensive, artistically decorated exhibit, which will serve to visualize the important contribution of women in practically every avenue of daily life. One of the objects is to bring before girls the numerous fields which have been opened up to them.

Teaching Laundering. A survey of the laundry industry by the Board of Trade of Greater New York in cooperation with the State Department of Education is part of a general campaign undertaken by this organization for the establishment of courses in "The Science of Laundering" to be given as part of the public school system of instruction.

The survey has recommended that the Board of Education establish and maintain a two-year part-time cooperative course for boys, and a one-year part-time cooperative course for girls.

The adoption of such a course of training will benefit not only the employee and the employer, but also the consuming public, who should demand sanitary laundries and the preservation of clothing by proper washing.

Buffalo Public Schools. Under the direction of Ethel Coan, Director of Domestic Science for Buffalo, The Information Test for the Eighth Grade was used in some of the schools of that city with gratifying results.

This test was worked out last spring at Teachers College under the supervision of Prof. Anna Cooley. (See Editorial, August JOURNAL, page 394.)

PENNSYLVANIA

The State Educational Department is arranging to do some intensive work in giving all the geography pupils in the state general and detailed information on the state's resources with particular reference to fuels and other resources that are directly concerned with the home. A special book is now under preparation, using largely governmental material, especially the models in the Smithsonian Institution, and this book will go to all geography teachers in the state. Fuel will be intensively discussed and the book will also be placed in the hands of all home economics teachers.

A Home Management Project. The senior class of the Department of Home Economics, West Philadelphia High School for Girls, planned and executed a practical home management problem.

The organization of the work was placed in the hands of a home manager and her assistant, each elected by the class for the period of the project. They systematized the plan into individual and small group problems so as to include every phase of home management, as follows:

1. Scheduling and despatching of work for a family of nine, eight high school girls and one instructor, in a 10 room city house for two days, allowing for the allotted time required for active participation in school on Friday, were carried out by the home manager and her assistant.

2. The problem involved the estimation of the cost or refinishing and redecorating a living-room on the second floor to include upholstering three chairs, papering the walls, and painting all wood-work.

3. The market order for the family was estimated previous to the day of arrival. Additional marketing during the time was minimized.

4. The financing included making the family budget for the period, keeping accounts, checking out all funds, and collecting dues.

5. The care of the fires included both the hot-air furnace and the coal range used for cooking. A gas stove in the outside kitchen was called into service for the early morning breakfast.

6. Amount of fuel used for the gas lighting was estimated by one girl who was general inspector.

7. On Saturday morning a one-hour practical lesson was given in home nursing.

8. The home manager was responsible for checking up all work, and conducting the religious services each evening before bedtime.

The criticism of the entire project was submitted by the girl in charge of despatching the work.

SOUTH DAKOTA

University of South Dakota. One of the features of commencement week was an exhibit arranged by Fannie Sims, Professor of Home Economics, and Mrs. Edith Abel. The work of the students in the classes in clothing design and interior decoration was featured.

During the spring session the enrollment in the Department of Home Economics more than doubled that of the fall.

WISCONSIN

University of Wisconsin. An exhibition of craft work in block printing, tie-and-dye work, and batik, done by home economics students, was held in Milwaukee Art Institute last spring. This was part of the exhibit shown earlier in the State Historical Museum in Madison.

Milwaukee-Downer College. On May 27 the teachers and students from the junior and senior classes of the high schools of Milwaukee were guests of Milwaukee-Downer College. The May Day play was given on the campus under the hawthorn trees, and the Home Economics Department arranged an exhibit of the work of the clothing and textile classes, and served refreshments.

A series of five illustrated lectures on cotton, silk, wool, linen, and fur, was given during the spring term to students of the textiles class by the head of the educational

department of the Public Museum. Heads of departments of the leading stores gave demonstration lectures on rugs, linens, and silks.

A vocational conference was held in May to acquaint students with various promising fields of work for college women. Gladys Meloche, Extension Department, University of Wisconsin, spoke on Opportunities in Extension Work in Home Economics.

One of the graduates of the class of 1922 has accepted a position in the Bureau of Chemistry, Washington. Another is employed in a hospital laboratory for work in food and physiological chemistry.

NOTES

Edwin H. Ansell, luncheon manager of the New England Telephone and Telegraph Company, Boston, died at his home in Melrose on March 13. He received his early education in Boston and took up the trade of interior decorating. Since 1887 he had been connected with the New England Telephone and Telegraph Company. In 1914 he was appointed luncheon manager, the position including the supervision of furnishing the recreation rooms provided for the women employees. Those who attended the Swampscott meeting last year will remember Mr. Ansell's address on the Industrial Cafeteria.

Gudrun Carlson, who has held the positions of head of the Department of Home Economics at the University of South Dakota, and instructor at Skidmore and at Teachers College, has been appointed Home Economics Specialist in the Institute of American Meat Packers. She will work along lines of educational service and research as it pertains to home economics questions.

Mrs. David W. Clark, formerly Elizabeth Mann, who has been living on the Crow Creek Indian Reservation at Fort Thompson, S. D., returned to Teachers College as an instructor in Foods and Cookery during the summer session.

Ruetta Day, Assistant Professor of Home Economics at the University of South Dakota, has resigned from the staff and will spend the fall at Teachers College.

Winifred Stuart Gibbs has been appointed Director of the Food Service Bureau and Associate Editor of *The American Food Journal*.

Geraldine Gorton, Head of the Home Economics Department of the Masten Park High School, Buffalo, New York, spent the summer visiting schools on the Pacific coast.

Ellen Hillstrom of the University of Wisconsin has been appointed chairman of the art section of the Western Arts Association for the coming year.

Ola E. Johnston of Paducah, Kentucky, M.S. University of Wisconsin, 1922, will succeed Betsey Madison as State Supervisor of Home Economics Education.

Mrs. Kate Kinyon, who has been acting supervisor of Home Economics in the Public Schools, Lincoln, Nebr., has accepted a position as Supervisor of Home Economics in the Denver Schools.

Hazel Manning, Assistant Professor of Home Economics, University of Wisconsin, has been elected National President of Omicron Nu.

Abby L. Marlatt, Director of Home Economics, University of Wisconsin, sailed on the Pittsburgh from Philadelphia, June 22, for a fifteen months' trip around the world.

Rose Shonka, who has been on a year's leave of absence will return next year as Supervisor of Home Economics in the public schools of Lincoln, Nebr.

Announcement is made of the marriage of **Mary B. Stocking to Frank A. Witcomb**, in Boston, Monday July tenth. Miss Stocking has been Assistant Professor of Household Management at Simmons College, and Mr. Whitcomb is known to the Home Economics world as a member of the firm of Whitcomb and Barrows.

Mary B. Vail, formerly of the faculty of Mills College, is now in Japan giving lectures at Doshisha School, Kyoto, and other colleges.

Emma Winslow, who has spent the past winter doing special studying in sociology and economics in England, returned to the United States in June and was an instructor in the summer school at Teachers College.

Correction. In the report of student subscriptions in the August JOURNAL the mistake was made of printing 2 for 12 as the number from Framingham Normal.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE Journal of Home Economics

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OCTOBER, 1922

No. 10

MATHEMATICS NEEDED IN ELEMENTARY CLOTHING

THEODOSIA TUCKER CALLAWAY

Stephens Junior College, Columbia, Missouri

Since many pupils in elementary clothing classes seem to be handicapped by their inability to handle the mathematics involved, this study was undertaken to determine definitely what mathematical concepts and processes are used in a course in elementary clothing, and the degree of difficulty to which each process is carried. The study will be used as a basis for constructing tests and exercises that will locate and remove such handicaps.

The study is based on an examination of Baldt's *Clothing for Women*, the text used in Stephens Junior College to supplement the lectures in elementary clothing. A careful examination of the text was made and all words and expressions that are distinctly mathematical or that imply mathematics, were classified and their frequency determined. The standards for determining whether or not a word or expression should be considered as mathematical or implying mathematics were the principles set forth and used by Lewis W. Williams of the University of Illinois in a similar study of "The Mathematics Needed in Freshman Chemistry."¹ The results of this examination are shown in the accompanying tables.

Table I gives the mathematical concepts, a reading knowledge of which is necessary for understanding the text. Of the one hundred twenty-eight concepts listed, fifty-six or about 42 per cent are distinctly geometrical in nature and the rest are arithmetical.

Table II shows that, with one exception, all the denominate numbers used are those with which a girl becomes familiar early in her home experience as well as early in her elementary schooling. The use of the "head" as a unit of measure will no doubt be new to the girl, but its meaning and use is fully explained in the text. This table also shows that "long measure" and "United States money" are the two

¹ School Science and Mathematics, October, 1921, p. 654.

most important measures used in elementary clothing, and it is interesting to note the extensive use of the *inch*, the moderate use of the *yard* and the entire absence of the *foot* from the list.

TABLE I
Mathematical concepts

Add (or adds).....	23	Estimate.....	2	Product.....	1
Added.....	3	Even numbers.....	2	Proportional.....	9
Adding.....	4	Fifth.....	2	Proportionate.....	6
Additional.....	1	Figure.....	1	Pyramid.....	1
Amount.....	2	First.....	180	Radiating lines.....	3
Angle.....	4	Five-pointed star.....	1	Radius.....	12
Apportion.....	3	Four-sided.....	1	Rectangle.....	6
Approach a straight line.....	1	Fourth.....	8	Remainder.....	12
Approximate.....	3	Height.....	20	Right angle.....	39
Area.....	17	Horizontal.....	15	Round.....	6
Average.....	2	Indefinite length.....	8	Ruler.....	14
Balance.....	2	Infinite number.....	1	Second.....	68
Breadth.....	1	Intersecting lines.....	6	Secondary.....	1
Broken line.....	1	Length.....	132	Single.....	30
Calculate.....	15	Less (minus).....	2	Sixth.....	1
Center.....	311	Less than.....	1	Spaces (areas).....	1
Center line.....	4	Line (or lines).....	613	Square.....	30
Circle.....	5	Line AB, etc.....	12	Straight edge.....	1
Circular.....	68	Mathematically.....	1	Straight line.....	30
Compute.....	1	Measure.....	285	Subtract.....	5
Couple.....	2	Measurement.....	9	Sum.....	1
Curve.....	98	Measuring.....	13	Tailor's square.....	3
Cylinder.....	4	Middle.....	7	Take from.....	5
Cylindrical.....	1	Minus.....	31	Tape measure.....	15
Decrease.....	4	Multiply.....	5	Tertiary.....	1
Deduct.....	6	Nothing (zero).....	9	Third.....	12
Depth.....	82	Numbers.....	45	Three-fold.....	1
Diagonal.....	26	Numeral.....	2	Times.....	22
Diagonals.....	1	Oblongs.....	3	Total.....	3
Diameter.....	3	Once.....	18	Triangle.....	1
Diamond.....	3	Oval.....	2	Triangular.....	1
Difference.....	3	Pairs.....	2	Triple.....	4
Dimensions.....	1	Parallel.....	21	Twice.....	51
Divide.....	18	Per cent.....	20	Two-fold.....	1
Divided.....	3	Percentage.....	4	Unequal.....	1
Dividing.....	2	Perpendicular.....	3	Uneven numbers.....	2
Division.....	9	Pivot (center of circle).....	3	Vary (or varies).....	6
Divisions.....	20	Plus.....	77	Vertical.....	12
Double.....	37	Point.....	107	Whole (sum).....	1
Equal (or equals).....	470	Point A, etc.....	15	Width.....	171
Equally.....	1	Points of intersection.....	4	Yard stick.....	1
Equal parts.....	3	Primary.....	2	Zero.....	1
Equidistant.....	1	Prism.....	3		

TABLE II
Denominate numbers

Cents.....	3	Hour.....	5	Score.....	1
Century.....	5	Inch (inches).....	1399	Skeins.....	3
Day.....	4	Minute.....	2	Week.....	4
Dollars.....	454	Moment.....	1	Yard.....	70
Dozen.....	8	Month.....	1	Year.....	12
Head.....	14	Pounds.....	2		

TABLE III
Inches

INCHES	INTEGERS			MIXED NUMBERS			COMMON FRACTIONS									DECIMALS
	One place	Two places	Three places	One place	Two places	Three places	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{3}{4}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{7}{8}$	$\frac{1}{16}$	0.5	
Expressed in.....																
Words.....	427	33	0	48	0	0	129	178	82	56	37	15	2	9	0	
Figures.....	22	143	1	25	61	0	7	7	10	11	9	7	8	0	12	

TABLE IV
Common fractions (not included in Table III)

	FRACTIONS						
	Half	Fourth	Third	Sixth	Eighth	Tenth	Twelfth
Words.....	162	45	23	27	12	7	6
Figures.....	0	2	0	0	0	0	0

Table III gives in detail the use made of the inch. Length in inches in about 43 per cent of the total number of cases is represented by a common fraction, and in 33 per cent of the cases by a one place integer. It is interesting to compare the fractions in this table with those in Table IV, which gives all the common fractions used in the text and not included in Table III. One finds that the fractions in these tables do not differ in size but that they differ in two other respects, at once interesting and significant. These points of difference lie in the "divisions of the whole" which the denominators represent and in the operations performed upon the fractions. The denominators in Table III correspond to the divisions on the ordinary ruler or linear scale—halves, quarters, eighths, sixteenths; while the denominators in Table IV correspond in 81 per cent of the cases to the divisions most easily and frequently made by the human eye and mind—halves, thirds, fourths, and in the other 19 per cent of cases, the denominators are multiples of these divisions.

The operations performed upon the fractions in Table III are, in general, addition, subtraction, multiplication (in which the inch, a concrete number, is the multiplicand) and, in a few cases, division and reduction. Almost the only operation performed with the fractions in Table IV is multiplication, in which the fraction plays the rôle of multiplier.

TABLE V

Money

	AMOUNTS				
	Less than \$1.00	\$1.00 to \$10.00	\$10.00 to \$100.00	\$100.00 to \$1000.00	\$1000-
Whole dollars.....	0	175	8	5	1
Mixed dollars.....	0	71	1	2	0
Decimal (cents).....	191	0	0	0	0

Table V shows that the amounts of money used are small; \$1200 is the largest amount and it occurs but once, while 96 per cent of the cases represent sums of money less than \$10 in value. The operations with money, written as decimals, are limited to the addition of three to forty addends ranging from \$.01 to \$25.00, and to the multiplication of small decimals (cents) by one place whole or mixed numbers or by small common fractions. (See Table VI.)

TABLE VI

U. S. Money, Multiplication

MULTIPLIER	MULTIPLICANDS		
	Dollars	Dollars and cents	Cents only
Integer (one place).....	9	0	24
Mixed number.....	0	0	13
Fraction.....	0	0	1

TABLE VII

Cardinal numbers (not included in previous tables)

	INTEGERS				
	Zero	One place	Two place	Three place	Four place
Words.....	1	523	8	0	0
Arabic figures.....	2	566	161	289	30
Roman figures.....	0	71	6	0	0

One of the two chapters involving percentage presupposes a knowledge of the four fundamental operations with decimals. This chapter deals with the distribution of a \$1200 budget. Two cases of percentage are used, (1) finding a certain per cent of \$1200, and (2) finding what per cent a certain sum of money is of \$1200; the operations involved are (1) multiplication of a four place integer by a two place decimal, and (2) division of a two or three place integer by a four place integer. The other chapter involving percentage is concerned with the absorbent quality of fabrics, given in per cents. To understand this chapter elementary students need to know only the meaning of the term "per cent."

There is a chapter on color in which use is made of symbols involving letters and numerical superscripts; however, this symbolism, though akin to algebraic symbolism, is peculiar to the theory of color and is fully explained in the text.

Five chapters, or about one-fourth the number of pages in the text, are concerned with the drafting and use of patterns. The directions for drafting patterns are stated in the form of equations written out in words, and illustrated by geometric figures. There are four hundred thirty of these equations and they represent arithmetical problems to be solved, geometric constructions to be made, or more often, combinations of the two. Relatively few processes are required for the solution of these problems, but every possible combination of these processes appears. The exact number of processes required, and the degree of complexity involved in drafting any one pattern cannot be fully determined, for, after drafting a pattern to the set of standard measurements given in the text, each student is required to draft a pattern to her own measurements, and her measurements may be such as to simplify, or to further complicate, the given problem.

The most complicated problem given in the text is the "Rule for Finding the Radius (of a circular flounce): Multiply the width of the flounce at the top by the depth; divide the product by the difference between the width at the top and bottom, the result being the radius of the curve at the top" (p. 124). Illustrations of the simplest, the most common, and (with the exception of the rule quoted above) the most complicated, types of directions are:

1. HM equals five inches.
2. AE equals one-sixth neck measure plus three-eighths inch.
3. AB equals one-half hip measure minus one-eighth of one-half width around bottom.

The arithmetical processes and geometric constructions a knowledge of which is necessary to carry out the four hundred thirty directions of this type are:

1. All the processes involved in the addition, subtraction, multiplication, and division of small integers, mixed numbers, and common fractions with small denominators.

2. The reduction of yards to inches and inches to yards.

3. To draw a line of given length.

4. To draw a line parallel to a given line at a given distance from it.

5. To draw a line perpendicular to a given line from a given internal or external point.

6. To draw a circle, or arc of circle, having given the center and radius of the circle.

If we add to this list the processes involved in performing the four fundamental operations with decimals (not exceeding four places in the integral, and three places in the decimal part) we shall have all the processes and constructions encountered in the text.

It is quite obvious that pupils in elementary clothing classes in high school or college should have met with these elementary and fundamental processes and with most of the geometrical as well as arithmetical concepts by the time they have completed the elementary school. Therefore, exercises designed to remove this type of handicap should consist of reviews of the methods of performing these operations and of abundant drill in simple applications within the rather narrow range indicated in this study.

It is quite probable that a girl will have had plane geometry before taking elementary clothing. It is also quite probable that even if she remembers the few simple constructions needed they will not serve her purpose, for the method of constructing parallel and perpendicular lines in the sewing laboratory is by means of the tailor's square and not the classic "straight edge and compass" method which is the only method taught in many plane geometry classes. Difficulties with these constructions will be overcome most effectively and most economically when the teacher gives instructions and drill in the use of this new tool, the tailor's square.

AN ANALYSIS OF TEXTBOOKS IN CLOTHING AND TEXTILES

ETHEL L. PHELPS

University of Minnesota

The purpose of the investigation reported in this paper is to trace the development of the subject matter of clothing and textiles as reflected by textbooks, and to ascertain the persistency and recurrence of fundamental problems within that field as determined by such texts. It is hoped that the material herein presented may make a contribution to the information concerning the printed subject matter within this field, and may, by summarizing such information, serve as a starting point from which further work may proceed. A study of textiles and clothing textbooks may picture the development of the subject, and may also present facts concerning textbooks in current use which should function in the evaluation and selection of such texts.

A recent publication¹ points out the importance of the textbook as a factor directly influencing the success of teaching in the average classroom, an importance which is increased in the light of our inadequate teaching staffs in America. The writer further states that the textbook "is an aid in instruction because it is a convenient means for having at hand necessary data, . . . because it presents a definite organization of material, . . . because it furnishes the teacher a means of selecting pertinent subject-matter." According to Maxwell, the following elements should be given consideration in the selection of textbooks: content and organization, needs of users, purpose of author, accuracy and reliability of material, relative emphasis on the several aspects of the subject, amount of material included, illustrations, and helps, such as index, list of references, charts, and diagrams. Other considerations of lesser importance are the reputation of the author, and date of copyright. A third group of standards deals with the mechanical construction of the book, its appearance, type used, and size of page.

One of the earliest textbook studies was the analysis of history texts begun by Bagley and Rugg² in 1914. Since that date Jones³ has studied

¹ Maxwell, C. R., *The Selection of Textbooks*. Boston: Houghton Mifflin Co., 1921, p. v, vii, 4, 5, 62-75.

² Bagley, W. C. and Rugg, H. O., *Univ. of Ill., School of Educ. Bull.* no. 16, 1916, p. 8 ff.

³ Jones, R. G., *The 14th Yearbook of the Natl. Soc. for the Study of Educ., Part I*. Bloomington, Ill.: Public School Pub. Co., p. 38 ff.

primer vocabularies; Jessup and Coffman,⁴ arithmetic; Monroe,⁵ arithmetic; Rugg and Clark,⁶ ninth-grade mathematics; Housch,⁷ second-year readers; Woody,⁸ spellers; and Trilling and others,⁹ home economics.

METHOD OF ANALYSIS

Selection of books. A list of clothing and textiles textbooks was prepared from bibliographies, references, and book lists published by various colleges and libraries, or included in bulletins, texts, or reference books. With the few exceptions noted below, all of those books retained for analysis contained statements by the author indicating that they were intended for use as textbooks. Three exceptions were made, two of these being books which belonged to a period of which there were only few representatives, and which in form and content closely resembled a textbook, and one being a book which is known to have been used as a text. The final list included forty-three books. All of these were American publications, with the exception of four, which were English, but which were published by firms maintaining large branch establishments in this country, and which have apparently been used widely enough to be carried in stock by the American branch of the firms.

General data recorded. The following general facts were recorded for each book: date of publication, author, title, publisher, place of publication, purpose of book, number of pages, average number of words per page, number of graphs, tables, photographs and drawings used, character of legends appended to illustrations, and style of writing.

Analysis of subject matter. As a result of trial and error experimentation with the first few books studied, and of teaching experience with the subject matter involved, the following scheme for analysis was adopted and proved to be usable for all the books. The whole field was divided into three groups: clothing, textiles, and miscellaneous, which were in turn divided into fourteen topics for gross comparison, and these subdivided into fifty-four subtopics for purposes of detailed comparison

⁴ Jessup, W. A. and Coffman, L. D., *The Supervision of Arithmetic*. N. Y.: The Macmillan Co., 1916, p. 110 ff.

⁵ Monroe, W. S., *The 16th Yearbook of the Natl. Soc. for the Study of Educ., Part I*. Bloomington, Ill.: Public School Pub. Co., 1918, p. 112-127.

⁶ Rugg, H. O. and Clark, J. R., *Univ. of Chic. Press, Supplementary Educ. Monographs*, Vol. II, no. 1, Apl. 1918, p. 26 ff.

⁷ Housh, E. T., *The 17th Yearbook of the Natl. Soc. for the Study of Educ., Part I*. Bloomington, Ill.: Public School Pub. Co., 1918, p. 40 ff.

⁸ Woody, C., *Jour. of Educ. Research*, I: 119-128. Feb., 1915.

⁹ Trilling, M. B. et al., *Home Economics in American Schools*. Chicago: Univ. of Chicago Press, *Supplementary Educational Monographs*, Vol. II, No. 6, Oct., 1920, p. 1 ff, 25, 26.

of subject matter, as well as for a satisfactory analysis of the contents of the books.

The fourteen topics used were:

1. Clothing—general instruction and supplies; patterns, drafting and draping; applied design; sewing processes; garment construction; care of clothing; millinery.

2. Textiles—textile manufacture; textile fibers; fabrics and their uses.

3. Miscellaneous—foreign material; blank pages; bibliography; index.

The subtopics were carefully defined and the subject matter included in each was listed in detail, so that no confusion could arise in the course of the analysis. Following are examples of these subtopics: drafting and pattern making, principles of clothing design, sewing stitches, seam finishes, underwear, mending, weave structure, characteristics of fibers, tests for fabrics.

Tabulation of data. The above mentioned 54 subtopics were used in analyzing the 43 books. The total number of pages, including illustrations, and the number and size of illustrations were recorded for each subtopic, size of illustration being determined on the basis of the number per page. These data were summarized for each of the fourteen topics and the following information tabulated: total number of pages, number of pages of text, number of pages of illustrations, and number of illustrations both on a basis of the number of words per printed page and on the basis of a standard page, for which the average of the first 17 texts analyzed, 350 words per page, was chosen. As a third basis of comparison, the following percentages were computed for each topic and included in the tabulation—total (text and illustrations), text, illustrations. The above data supplied material for comparisons and summaries.

It was deemed permissible to compare all these books, although the aims and purposes were not identical, inasmuch as clothing and textiles textbooks, like texts in other fields, have been rather generally used with considerable disregard of the purposes outlined by the author.⁹

GENERAL CHARACTERISTICS OF THE BOOKS

Types of schools provided for. About half of these text books have been planned for the grades. Twelve of the 43 were intended for one or more of the following types of institutions—high school, normal school, and college. The rest were planned for varied uses, such as trade schools, vocational schools, continuation and technical courses, and evening schools. With the introduction of clothing and textiles into various

types of educational institutions, the work outlined in textbooks has been changed gradually, so as to meet the changing demands of home economics curricula.

Period of publication. The dates of publication range from 1882 to 1921. Twenty-seven, or 63 per cent, were issued during the decade ending with 1919. The rest of these texts were distributed as follows: one before 1890, five between 1890 and 1899, eight between 1900 and 1909, and two after 1919. The period of greatest productivity to date has been the ten years between 1910 and 1920, a period which coincides, probably, with the development of the subject in the school program.

Organization. A survey of the chapter headings of six texts devoted wholly or largely to textiles shows, in spite of apparent dissimilarity, certain points of similarity. Methods of textile manufacture, both primitive and modern, and the study of the production and manufacture of textile fibers are included in all six lists. Finishing processes, such as bleaching and dyeing, and laboratory tests are found specially noted as chapter headings in five. Other subjects occur less frequently. Chapter headings are indicative of variations in organization, but are not measures of variation in the actual subject matter content of the books. The order of subject matter arrangement, as well as the content, was undoubtedly influenced by the purpose of the book. The variety of purposes already noted, of number of large divisions used, and of character and order of such divisions, would probably be found to be quite as marked among the 38 books devoted wholly or in part to the study of clothing as it is in these five.

Style. Most of these texts are expository, or partly expository and partly descriptive, in style. In 1900-1909, one was written in question and answer form, and the next decade produced two books which were developed as narratives. This would seem to indicate that exposition is generally accepted as the most satisfactory form in which to present clothing and textiles subject matter in textbooks.

Illustrations. (1) Number. Twenty-six of the 43 texts have not more than 100 illustrations each, although of the 27 published during 1910-1919, 13 exceeded 100 illustrations per book, three of them having totals of more than 300 illustrations.

(2) Size. Less than a third of all the illustrations have occupied more than a third of a page, while more than two-thirds have occupied a fourth of a page or more.

(3) Kind. The use of photographs has increased from 3 to 44 per cent of all illustrations since 1900. The character of both drawings and photographs has shown a marked improvement.

(4) Graphs and tables. The use of graphs is limited but seems to be increasing, nine only being found and those occurring in the 35 books published from 1900 to 1920. Tables have been used more commonly than graphs, and also seem to be increasing gradually in number. Between 1910 and 1919, 10 of the 16 books in which tables were used, contained 82 out of a total of 131 tables.

(5) Legends. The use of explanatory legends has predominated throughout the whole period, no gradual development in this feature having been observed.

Bibliographical material. It is of interest to note the relatively small amount of bibliographical or reference material which has been used. Thirty-two of the texts contained no bibliography or reference lists, the two latest contributions in this field being included. This may possibly be due in part to the scarcity of adequate reference material for clothing work, to the technical nature of much of the reference material available in the field of textiles, or to the maturity of student for whom the text is planned.

Indexes. Indexes have been used with gradually increasing frequency during the decades studied, although it should be noted that 37 per cent of the textbooks published between 1910 and 1919, when the use of the index was most marked, contained no index.

These changes in certain general features are probably manifestations in this field of the general development to be observed in textbook making. They reflect our increasing knowledge of the use of illustrations, both as to kind, size, and number, of the functions and value of bibliographies and indexes, and of other general features of a text.

SIZE AND SCOPE OF THE BOOKS

Size. The size of the books has been measured by the number of pages in the book, the number of words per page as printed, and the number of 350 word pages, a size selected as standard for purposes of comparison. Blank pages and those devoted to foreign material¹⁰ have been omitted.

The number of pages per book has gradually increased during the two decades following 1900. Previous to that date none exceeded 200 pages. The majority of these texts for 1910-1919 contain from 200 to 300 pages; the maximum size is one 500-600 page book, written in four

¹⁰ "Foreign material" has been used to include other topics which are not a part of the subject matter of textiles and clothing, such as directions to teachers, making beds, interior decoration, etc.

parts. The clearly marked tendency to increase the number of pages is evidence of an increasing volume of subject matter which has grown with the development of home economics, and of a freer use of illustrative material. Such growth of subject matter may in part be due to an increased use of applications of science, economics, and art to the problems of clothing and textiles.

The number of words per page is determined by the size, style, and placement of the type used, as well as the dimensions of the page. No record was made of these factors, but the variation in them might be safely assumed to parallel that of textbooks in other subjects for similar grades. The average for the whole group is very nearly 350 words per page and there has been relatively little change in the size of page used, as measured in this manner.

Compared on the basis of the 350 word page, the size of these books has markedly increased. This may have been partially due to a wider introduction of the subject in schools, to its introduction into increasingly diversified types of schools, or to the added interest in vocational education and the resultant demand for literature relating thereto.

Scope. Textiles and clothing textbooks have been developed as distinctly separate units in the literature of home economics. Although foods courses have been associated with clothing courses in school curricula for several decades, but three of the texts studied contain sections devoted to foods. Three books include materials for other phases of home economics, of which shelter, home equipment, and care of the baby are examples. Numerous texts may be found in which clothing and textiles have been treated separately, or in which the two have been somewhat correlated. This condition is shown by the fact that 19 of the 43 books devoted 90 per cent or more of their space to clothing work, five devoted 90 per cent or more space to textiles, and the remaining 19 contained varying amounts of the two.

Textiles first appeared in these books in combination with clothing work during the 1890 to 1894 period, the first book dealing primarily with textiles having been published in 1912, and all of the five textiles texts belonging to the decade ending with 1919. The introduction of textiles is of later origin than that of clothing work, and its recognition in these textbooks has been increasing gradually.

Further evidence of this development is found in the increasing number of 350 word pages contributed to clothing and textiles, during the five-year periods studied, with the exception of a slump during 1900-1904 in the textiles contributions.

The kind of clothing work offered has changed quite as much as the quantity. Two types of sewing work may be said to have been developed—that in which sewing processes are taught by means of samplers or models, and that in which the experience is acquired through the construction of garments or other useful articles. Excluding the strictly textiles texts, the remaining books have outlined clothing problems of either one or both of these types. During the whole period there has been a tendency to eliminate work on samplers and to introduce construction work in its place. During the 1910–1919 period three of the clothing books dealt with samplers, seven with samplers and garments, and twelve with garments only. Such a transfer of emphasis would seem to have followed the increased knowledge of educational psychology and of efficient methods of presentation of subject matter.

(To be concluded)

HOME ECONOMICS TEACHING LOAD

JESSIE WHITACRE

Utah Agricultural College

The School of Home Economics of the Utah Agricultural College, in an endeavor to establish the teaching load in accordance with the practice of other institutions giving work leading to the Bachelor's Degree in Home Economics, sent out the following questionnaire:

1. How many students are registered this year in your institution?
2. How many women are registered in the entire institution?
3. How many women are registered in home economics?
4. How many members are there in your home economics staff?
5. What is the range of clock hours per week spent in the class room by the members of your home economics staff; that is, what is the smallest, the average, and the greatest number of clock hours per week for the members of your staff?
6. Is there a definite or uniform difference in the teaching load when it is lecture work as compared with laboratory work only, or with both kinds of work done by each member?
7. What is the teaching load in clock hours per week for those of your staff members having administrative responsibilities?
8. What is your opinion as to the size of the teaching load of your home economics staff members; that is, is it too light, too heavy, or a reasonable one?
9. How does the home economics staff members' teaching load compare with that of faculty members of other departments of your institution?

The replies from 26 institutions are summarized in the chart.

INSTITUTION	HOME ECONOMICS TEACHING LOAD						Minimum
	Registration						
	Total	Women	Home Economics majors	Per cent of women in Home Economics	Number in Home Economics Staff	Ratio teaching staff to students	
Washington State University	4,673	Not determined. About 30% of total	185 majors. 400 more 1 lecture a week on food. 50 elect various home economics courses	(?)	Not answered	(?)	15
Washington State Agricultural College	1,929	678	Majors 129. Total in classes 356	19.0	9 and head. 2 of whom have charge of student feeding and do part time teaching	1:12.9	One teacher teaches 2 hours methods and high school classes and One in practical cottage 10 hours class room
Oregon Agricultural College	3,400	1,011	529	52.4	28	1:18.8	19
University of Montana	1,153	540	About 100	18.5	2	1:50.0	
University of California	10,000	5,000	About 400	8.0	8 full-time, 3 half-time	1:42.1	9
University of Nevada	543	188	29	15.4	2 full-time, 1 half-time	1:10.6	14
University of Idaho	1,200	500	50	10.0	6	1:8.3	18

TEACHING LOAD IN CLOCK HOURS			HOME ECONOMICS TEACHING LOAD	
Number	Average	Head's	Head's opinion of work	Remarks
19		Not answered	Very fair	Definite uniform load throughout University. 15 hours full schedule. Lectures to 40 or more = 1½ hours. To less than 40 = 1 hour. 2 laboratory hours = 1 hour except in Home Economics = 1½ hours since first ½ hour in Home Economics laboratory is recitation. No distinction in any way between Home Economics and other departments
	16 and 17 hours for those having administrative duties	4 hours	Load should be about 20 hours, no more than 22 with lecture and laboratory. This equals about 12 credit hours	College trying to set standard: 1 lecture hour equals 2 hours laboratory. On this basis instructor should carry 16 credit hours a week. Home Economics on same basis as other laboratory courses
	23	5 to 7 hours	Fairly reasonable	Lectures to normal size sections—1 teaching load hour. To large sections = 1½ teaching load hours. Laboratory = ½ teaching load hour. Home Economics load lighter than average
	About 24	24 hours	Both staff members have lecture and laboratory work and also administrative work. Load <i>entirely too heavy</i>	In College of Liberal Arts load much lighter than in Home Economics; in all Science departments load as heavy and somewhat heavier
	11	Same as those without administrative duties	On the whole reasonable. Equitable with that in other University Departments, in so far as comparison is possible	Teaching load laboratory: lecture :: 2:1. Varies with type of course; every member of staff both lecture and laboratory
		14 hours	Reasonable	No difference in load if lecture or laboratory or both. Home Economics load compares favorably with that in other departments
	26	About 15. Varies greatly	18 to 22 hours would be reasonable	Home Economics lighter than in other departments. Load varies if both lecture and laboratory

INSTITUTION	HOME ECONOMICS TEACHING LOAD						Minimum
	Registration						
	Total	Women	Home Economics majors	Percent of women in Home Economics	Number in Home Economics Staff	Ratio teaching staff to students	
University of Wyoming	508	237	36	15.1	3 and student assistant	1:12.0	16
Colorado Agricultural College	863	249	209	83.5	7 full time, of whom 2 are part time. Student assistants	1:29.7	Practice of 2 lecture credits, 8 extension projects, 10 dietetic lectures
University of Utah	About 2,555	About 896	120	13.3	5, of whom 1 part time	1:24	12
Agricultural College of Utah	1,123	272	131	48.2	6 full-time 2 one-half time	1:18.7	11 in faculty except 10 or 16
North Dakota Agricultural College	835	216	25 sub-collegiate 49 collegiate	34.2	5	1:14.8	11
Kansas State Manual Training Normal	1,320	About 700	College.....100 Others.....143 Total.....243	34.7	7	1:34.7	11
University of Maine	1,226	283	61	21.5	4	1:15.2	11

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ACCRING LOAD IN CLOCK HOURS			HOME ECONOMICS TEACHING LOAD	
imum	Average	Head's	Head's opinion of work	Remarks
rs labo- 1, 17 labora- d 5 lec- Assist- hours	18 and 20 (median hours)	Same as others	Head's too heavy. Rest reasonable, except too many different preparations	No difference in load when lecture and laboratory work done. Home Economics load about average. Certain others lighter or heavier
		2 lectures, one-half time to field work supervising vocational Home Economics	With one exception, sufficient student assistance to make load reasonable	Load compares favorably with that in other departments. Until recently too heavy
	16 to 18	More than some of instructors. Equals any except training school teacher	In two cases too heavy	Load heavier when both lecture and laboratory. In most cases compares favorably with other departments. (First two years of college work only given)
		11 hours fall; 15 to 18 in winter and spring	10 to 12 hours for head so long as classes 8 to 30 in number, reasonable. 15 to 18 heavy if both lecture and laboratory and some administrative duties. 20 to 22 heavy but possible if laboratory only and no administrative duties	Best quality of work possible only when load not overheavy, present load needs lightening. About same as other departments
	18	5 hours	Reasonable. Positive work always strengthened when load not too heavy	More hours in load if laboratory only. Home Economics among lighter of load but many same load
	About 20	15; again, 9 plus cafeteria supervision	Reasonable, except at times when outside calls, banquets, lectures, designing, must be done	Home Economics attempts to make difference in load if work both lecture and laboratory. Home Economics longer hours than in other departments, since so much laboratory work
		5 to 10 hours plus practice teaching	Reasonable except in case of instructor having 7½ hours and practice house supervision. Too heavy	No difference made for lecture and laboratory work both. Load same as other departments

INSTITUTION	HOME ECONOMICS TEACHING LOAD						Minimum
	Registration						
	Total	Women	Home Economics majors	Per cent of women in Home Economics	Number in Home Economics Staff	Ratio teaching staff to students	
Iowa Agricultural College	3,896	983	810	82.4	53 resident, 11 extension	1:15.2	19
University of Iowa	About 5,000	About 2,000	150	7.5	5	1:30	12
University of Kentucky	1,468	478	98	20.5	8	1:12.2	8
University of Indiana	2,801	1,139	125	10.9	8	1:15.6	8
Purdue University	2,700	398	360		10 resident, 5 extension, 1 experimental station	1:36	1
University of Minnesota	Not answered			(?)	24 full-time 6 one-third or more time	(?)	10
Pennsylvania State College	3,136	322	147	45.7	13 of whom 10 full-time	1:10.1	13

continued

TEACHING LOAD IN CLOCK HOURS			HOME ECONOMICS TEACHING LOAD	
Minimum	Average	Head's	Head's opinion of work	Remarks
	21	$\frac{1}{2}$ to $\frac{3}{4}$ for each having administrative duties	Reasonable	No difference in teaching load if both lecture and laboratory. Teaching loads of all departments on file in President's office
	15	19 hours	18 or 19 hours, load too heavy. Should not exceed 15 hours or 12 hours if research work done by instructor to insure best results	No difference in load when lecture and laboratory but acting head thinks there should be. So long as load below 18 hours, compares favorably with other departments
	15.5	8	25 hours too heavy, 15 to 18 satisfactory	Lecture and laboratory work both done by each member. Load about same as in other departments
12 credit hours in summer school		8	Reasonable	Fewer hours than modern language. Difficult to give 12 credit hours (value of credit hours not given in letter) to instructor teaching many laboratories. Give credit for account keeping, marketing, travel, time for lectures off campus
	15	4 lecture hours	Reasonable except in one case too heavy. Teachers do better work when reasonable amount of work to do	No difference made in instructors load when both lecture and laboratory, but more laboratory assistance when lecture work heavy. Home Economics professors and instructors heavier load than in other departments. Laboratory assistants load about same
	18	All having administrative duties lighter than others by 2 to 4 hours or more. Head's not specifically stated	So much depends on quality of teaching which instructor wishes to do, as to amount she can efficiently handle. Head almost hesitates recommending any amount of work as reasonable or unreasonable	10 to 12 credit hours = full-time teaching load, 1 lecture hour = 1 credit hour, 2 lecture laboratory hours = 1 credit hour, 3 laboratory hours = 1 credit hour. Home Economics load compares favorably with other lecture courses. Customary to start instructor on 2, 5 hour lecture-laboratory course. Yet no hard and fast rule
		None first semester. Second, 3 teaching hours and 3 days in field supervision first 6 weeks	Reasonable. Head's field supervision first necessary this year	Load on average with other departments

INSTITUTION	HOME ECONOMICS TEACHING LOAD						Minimum
	Registration						
	Total	Women	Home Economics majors	Percent of women in Home Economics	Number in Home Economics Staff	Ratio teaching staff to students	
University of Missouri	3,794	962	320	33.3	13 of whom 3 half-time	1:22.1	10 lectures
University of Wisconsin	7,344	3,545	275	7.7	27	1:10.2	16
Ohio State University	7,639	1,982	314	15.8	14	1:22.4	2 plus innumerable conferences
Cornell University	5,342	1,123	286	25.4	Teaching . . . 22 Extension . . . 17 Administration . . . 24 Total . . . 60	Teaching 1:13 Teaching and Administration 1:6.4	
University of Illinois	9,084 with Chicago schools	2,097	417	27.1	Teaching 18, cafeteria 1, student laboratory assistants 2, extension 7	1:23.1	2 members class work. 3, 5, 7
University of Chicago	6,215	2,901 with extension and night classes	110	3.7	7 full-time, 38 part time, 6 in institutional department do some teaching also	1:15.7	8

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TEACHING LOAD IN CLOCK HOURS			HOME ECONOMICS TEACHING LOAD	
Maximum	Average	Head's	Head's opinion of work	Remarks
Laboratory	10 credit hours	About one-half-time of teaching load	As light as should be. Light in order to put in research and outside activities	1 lecture hour = 1 credit hour, 2 laboratory hours = 1 credit hour. Average load in most other departments 12 hours
20		Not specifically stated. No reduction for administrative duties	Reasonable	1 lecture hour = 1 credit hour, 2 hours laboratory = 1 credit hour. Home Economics load slightly heavier than in other departments
21	14	Average 11 hours for each one having administrative duties	Reasonable for those without administrative duties. Too heavy for those having administrative duties	No comparative study of Home Economics load with that in other departments has been made
attempt to organize work by clock hours. get best and greatest advantage from staff members complete program in planning amount of work			No load should be more than 8 periods a week. This, if all laboratory 2½ or 3 hours very heavy	Burdens carried under different conditions so vary that clock hours do not tell tale. Purposely avoid stating among selves what is normal program
practice teaching	Others: 10, 12, 13, 15, 18, 21	Definite statement not possible	Reasonable. Though no deduction from clock hours warranted because of varying nature of work. Each person and each bit of work requires individual handling	No means for comparing Home Economics load with that in other departments. Traditional opinion which calls 16 hours teaching schedule cannot be general rule that fits all cases
15	12	About 6 assistants for laboratory work	Thoroughly reasonable. Made deliberately lighter than in some institutions with idea that all members of staff shall do and supervise research. Latter regular part of work, but cannot be expressed in hours	Each instructor must give 2 majors each quarter. If laboratory work included more hours spent in class room Home Economics load same as in other departments except in those where laboratory work not included, load is 8 hours

RESEARCH IN PHYSIOLOGICAL AND FOOD CHEMISTRY
IN THE HOME ECONOMICS LABORATORY

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The present organization of the Research Committee of the American Home Economics Association should make possible by sub-division a more efficient stimulation of research activity among home economics workers. This division into sub-committees based upon the major phases of home economics, institutional and household management, textiles, education, foods and nutrition, and extension, has already been explained to readers of the *Journal*. It is the object of this paper to present a further report upon the organization of the committee on research in foods and nutrition together with suggestions as to the problems and methods of investigation in this field.

In order further to simplify the matter of compilation of such suggestions, the sub-committee on research in foods and nutrition has been again subdivided into three smaller groups, dealing respectively with, 1) physiological and food chemistry, 2) field and clinic nutrition investigations, 3) methods of food preparation. Each of these groups will undertake to put together a suggestive list of questions in their own field which need investigation, and which have peculiar interest and appropriateness for the home economics department. They will in addition point out the work on these problems already published, and such unpublished work as they may be able to gain access to, and will suggest standards for accuracy and self-criticism in those undertaking research projects. This attempt is being made in a humble but determined spirit, and in the hope that the derogatory attitude of neglect or criticism now perceptible in outside observers toward research in the home economics departments of our colleges and universities may be met and destroyed.

THE FIELD OF PHYSIOLOGICAL AND FOOD CHEMISTRY

A difficult question at once arises when the vast and important field of physiological and food chemistry is surveyed by the home economics specialist. So varied and so fundamental to human survival is this field that it has been explored in all directions since the earliest beginnings of the scientific attack upon the problems of human environment. That much remains to be found out will be disputed by no one, but the right of the home economics laboratory to take over as its own any par-

ticular phase will undoubtedly be hotly contested. It appears to the writer of this report, however, that seeking the answers to constantly recurring practical questions upon digestion, food need, and food composition is quite as much our duty as is the corresponding search for answers to questions upon food preparation. However much the medical departments may be doing in this field it is plain that a vast number of problems remain unsolved and that many of these problems are of such a character as to commend themselves particularly to home economics workers. It cannot be doubted moreover from the cordial reception already accorded the few contributions made in this field that anything offered from the home economics laboratory will be welcomed by scientists working along similar lines in schools of medicine and public health, and in biological and medical research institutions.

The peculiar opportunities and privileges, as well as background and technique of the home economics staff should, however, never be forgotten in the choice of the problem. The large number of intelligent and eager young women students available as participating subjects should make metabolism studies upon women a marked subject for research. Little is on record as to the relation of the metabolism and food need of women to the menstrual and reproductive cycles, and yet no question more significant to the good of the race can be asked. It is surely not too much to expect that some light on this dark spot should be looked for from departments made up wholly of scientifically trained and interested women. Indeed, a beginning of this sort has already been made in more than one institution.

Another phase of the study of nutrition which has peculiar interest for women is that of infant and child feeding. It is significant that some of the earliest work done by research workers in home economics had to do with this topic. The development of the social phase of this subject in the present widespread clinic and field work with malnourished children is a natural outgrowth of such interest.

The enormous task of a complete biological analysis of all foods both raw and cooked in every manner remains to be carried out. The proximate chemical analysis of food so well begun some forty years ago has placed in our hands a valuable body of information concerning certain gross phases of food composition. This information needs to be added to in kind, particularly with reference to the composition of foods cooked according to specified methods, and this work should surely be done in the home economics laboratory. But the more laborious and perhaps

more significant testing by the biological method of these same foods has only been begun. The determination of the chemical and biological values of protein foods may and should be carried out side by side, and the same checking in the case of at least some of the so-called mineral elements is beginning to be worked out, particularly with reference to calcium and phosphorus. In the case of the vitamins only the biological method of analysis of foods is as yet available. The time should not be far distant when our tables of chemical composition and of vague qualitative vitamin content of foods will be supplemented by full quantitative information as to the values of these foods in animal nutrition.

Everyone is familiar with the frequent queries as to effect upon digestive processes of foods taken in certain combinations or cooked in given ways. These questions can be answered only by the tedious process of digestibility experiments, by the Rehfuß stomach tube, animal dissection, and similar methods. These problems might well be attacked in those home economics laboratories equipped with apparatus and personnel ready to handle them.

The foregoing survey is not meant to cover all possible phases of physiological and food chemistry which are suitable for development in the home economics department but is offered as suggestive of the broad outlines of such problems. The following specific topics are listed in the hope that they may prove of value to those who are ready to undertake new investigations.

PROBLEMS SUITABLE FOR RESEARCH BY HOME ECONOMICS WORKERS IN PHYSIOLOGICAL AND FOOD CHEMISTRY

1. *Variations in basal metabolism of women and children.* Determination of basal metabolism of underweight and overweight persons, of the influence of the menstrual cycle, of pregnancy and lactation, of overfeeding and underfeeding, of fevers, rickets, scurvy, anemia, diabetes, nephritis, goiter, digestive disturbances, and similar common pathological conditions.

Specialized but rather simple gaseous exchange apparatus is necessary for this work, and a special technique must be acquired for it.

The only institution so far reporting work on basal metabolism carried out in the home economics laboratory is the University of Chicago. The publications listed are as follows:

1. K. Blunt and M. Dye. Basal Metabolism of Normal Women. *J. Biol. Chem.*, **47**, 69 (1921).

2. K. Blunt, A. Nelson, and H. C. Oleson. Basal Metabolism of Underweight Children. *J. Biol. Chem.*, **49**, 247.

3. K. Blunt and V. Bauer. Basal Metabolism and Food Consumption of Underweight College Women. *J. Home Econ.*, **14**, 117 (1922).

2. *Changes in composition of the blood*, with reference to such constituents as hemoglobin, creatin, creatinin, uric acid, urea, lipins, phosphates, glucose, under each of the conditions listed above. Better and simpler technique for such analysis is rapidly becoming available as a result of the work of Folin, Denis, Stanley Benedict, Bloor, and others, and much needed information about the intermediary metabolism should be obtainable by its use. Both human and animal subjects may be used in such studies, and cooperation with university and other hospitals should be sought. A valuable phase of the latter endeavor is the possible interest and instruction of the dietitians and students planning to work in the hospital laboratory or diet kitchen. Just as it has come to be apparent that sound and scientific training of nutrition specialists can scarcely be available where the facilities of a good medical school are lacking, so research in certain phases of metabolism must be restricted to the same conditions. Example of publication:

C. C. Wang and M. Dentler. Creatin and Creatinin in the Blood. *J. Biol. Chem.* **45**, 237 (1920-21) (University of Chicago).

Two unpublished theses of a similar type are as follows:

M. Johnson. Arginin as Pre-cursor of Creatin-Creatinin of the Blood. M. A., University of California, 1920. Work in progress.

M. Eager. The Glucose Tolerance of Women as Affected by the Menstrual Cycle. University of California. Work in progress.

3. *Studies of the origin and precursors of metabolic end-products in the urine and feces*, particularly with reference to their bearing upon the diet. Examples of particular importance are the numerous studies of creatin and creatinin, uric acid, ammonia, urea, glucose, and acetone bodies, of the urine as influenced by reaction of diet, protein and carbohydrate proportions, kind of protein, sex, growth, etc.; studies of the occurrence of phenols in urine and feces as an index of intestinal putrefaction upon various diets; the interrelations of calcium and phosphate excretion and its bearing upon bone and tooth development particularly in childhood, pregnancy, and lactation; effect of vitamin deficiencies upon the nitrogen and sulfur partitions in the urine; changes in urinary end-products in the various nutritional disorders.

Not many studies along these lines have as yet been reported from home economics laboratories, although their direct bearing upon every day questions of diet can hardly be doubted. Some of the titles already available are:

1. M. S. Rose. Creatinuria in Women. *J. Biol. Chem.*, 32, 1 (1917) (Teacher's College, Columbia University).

2. H. C. Sherman, H. M. Pope and L. H. Gillett. The Monthly Metabolism of N, Ca, and P in Healthy Women. *J. Biol. Chem.*, 34, 373 (1918) (Columbia University).

4. *Determination of the gross digestibility and rate of digestion of foods.* A great deal of the most needed data as to total per cent of foods digested has already been accumulated, but much remains to be answered as to the effect of various methods of preparation upon digestibility, and as to the more difficult problems of speed, completeness, and ease of digestion of foods taken in various combinations. The work of the United States Department of Agriculture may be pointed to as the classic on total digestibility, particularly the recent extremely interesting work on raw starch. The work of Hawk and co-workers at the University of Pennsylvania outlines another type of contribution, and that of Cannon and of Carlson are too familiar to need mention. This kind of experiment requires rather simple equipment and technique and should commend itself to the home economics staff newly beginning research. Some of the contributions from home economics laboratories already available are:

1. N. E. Goldthwaite. Effect of Carbohydrate on Casein Digestion. *J. Biol. Chem.*, 7, 69 (1909-10) (University of Illinois).

2. K. Blunt and M. Mallon. Digestibility of Bacon. *J. Biol. Chem.* 38, 43 (1919) (University of Chicago).

3. M. S. Rose. Utilization of Salep Mannan. *J. Biol. Chem.*, 42, 159 (1920) (Teacher's College, Columbia Univ.).

4. A. L. Daniels and L. Strickler. Digestibility of Starch in Typical Dough and Batter Mixtures. *J. Home Econ.*, 9, 109 (1917) (University of Wisconsin).

5. M. S. Rose. Digestibility of Rolled Oats Prepared in Various Ways. *J. Home Econ.*, 14, 9 (1922) (Teacher's College, Columbia University).

6. M. S. Rose and G. MacLeod. Human Digestion Experiments with Raw White of Egg. *J. Biol. Chem.*, 50, 83 (1922).

7. A. F. Morgan and E. L. Brown. Value of Whalemeat as Human Food. *J. Home Econ.*, 14, 267 (1922) (University of California).

5. *The chemical analysis of foods.* Besides the usual routine chemical analysis of foods, information is needed as to distribution of the nitrogen, type of carbohydrate, composition of ash and make-up of ether-soluble extract. No particularly specialized equipment, other than the polarim-

eter and refractometer and ordinary chemical apparatus are needed for this type of work. Examples of publications from home economics laboratories in this field are:

1. K. Blunt and C. C. Wang. Chinese Preserved Eggs. *J. Biol. Chem.*, 28, 125 (1916) (University of Chicago).
2. M. Eichelberger and M. Asbury. Iron Analysis of Kale and Turnip. *J. Home Econ.*, 14, 131 (1922) (University of Chicago).
3. R. Okey and A. W. Williams. Inulin in the Globe Artichoke. *J. Am. Chem. Soc.* 42, 1693 (1920) (University of California).

6. *The biological analysis of foods.* It is in this field probably that the largest amount of work remains to be done, and at the same time that the best beginnings appear to have been made. The technique of such analysis has been laboriously evolved through the last 15 years by such investigators as Osborne and Mendel, McCollum, Steenbock, Drummond, Hopkins, Funk, Chick, Sherman, and others, and is now well on the way to as nearly rational standardization as the chemical methods have attained. Although most of the work in this field has had to do with vitamins or proteins the method is by no means limited to these two problems. Animals are used as subjects in most of this work, although utilization tests on human subjects are common, and are to be included under this heading.

The space and equipment for animal feeding experiments are not available in all home economics laboratories, but it would seem advisable to provide them wherever possible, for pedagogic if for no other reasons. The teaching of the doctrine of vitamins, for example, becomes uninspired and unconvincing if practical contact with the method of their detection be not provided the students. The equipment of cages etc. is not expensive, but a special room or rooms is necessary for the proper housing of the animals.

A full description of standard methods for vitamin investigation is presented elsewhere by this committee,¹ so that further detail need not be given here. It should be noted, however, that aside from the detection of the vitamins in raw foods the home economics worker must be particularly concerned with the effect of cooking and preserving processes upon those vitamins.

Our knowledge of the value of isolated proteins or of total nitrogen of various foods for maintenance of adults or growth of young in animal

¹ Methods of Vitamin Investigation. Elizabeth W. Miller, *Jour. Home Econ.*, 1922, 14: 364-368.

and human subjects is far from complete. Likewise little is known of the utilization by man and animals of the various mineral elements in the forms found in foods. A few of the titles of articles reported from home economics laboratories will illustrate the width and variety of this field.

1. A. Richardson and H. Green. Nutrition Investigations upon Cottonseed Meal. *J. Biol. Chem.*, 25, 307 (1916); 30, 243 (1917); 31, 379 (1917) (University of Texas).
2. M. S. Rose and L. F. Cooper. Biological Efficiency of Potato Nitrogen. *J. Biol. Chem.*, 30, 201 (1917) (Teacher's College, Columbia University).
3. A. L. Daniels and N. B. Nichols. Nutritive Value of the Soy Bean. *J. Biol. Chem.*, 32 91 (1917) (University of Wisconsin).
4. A. L. Daniels and R. Loughlin. Feeding Experiments with Peanuts. *J. Biol. Chem.* 33, 295 (1918) (University of Wisconsin).
5. A. L. Daniels and N. I. McClurg. Influence of High Temperatures and Dilute Alkalis upon the Anti-neuritic Properties of Foods. *J. Biol. Chem.* 37, 201 (1919) (University of Wisconsin).
6. A. L. Daniels and J. Rich. Value of Inorganic Sulfates in Nutrition. *J. Biol. Chem.* 36, 27 (1918) (University of Wisconsin).
7. A. F. Morgan and A. M. Heinz. Biological Value of Wheat and Almond Nitrogen. *J. Biol. Chem.*, 37, 215 (1919) (University of California).
8. M. S. Rose. Utilization of Calcium of Carrots by Man. *J. Biol. Chem.*, 40, 349 (1919) (Teacher's College, Columbia University).
9. A. L. Daniels and R. Loughlin. Fat Soluble Growth-promoting Substance in Lard and Cotton-seed Oil. *J. Biol. Chem.*, 42, 359 (1920) (University of Wisconsin).
10. B. K. Whipple. Water-soluble B in Cabbage and Onion. *J. Biol. Chem.*, 41, 175 (1920) (University of Chicago).
11. M. Davis. Observations on Vitamin Content of Foods. *J. Home Econ.*, 12, 209 (1920) (University of Wisconsin).
12. M. Davis and J. Outhouse. Effect of Ration Low in Fat-Soluble A upon the Tissues of the Rat. *Am. J. Dis. Child.*, 21, 307 (1921) (University of Wisconsin).

The following titles of work now in progress or unpublished are reported from a number of institutions:

1. L. Stanley and B. K. Whipple. The Influence of Cooking and Canning on the Vitamin Content of Foods. (University of Missouri.)
2. Almonds and other Nuts as Source of Vitamin A. Utilization of Calcium of Almonds. Utilization of Calcium in Man Basal Metabolism of the White Rat. (Teacher's College, Columbia University.)
3. B. M. Newbecker. The Biological Value of Almond Proteins and Almond Oil. *M. A.*, 1922, (University of California).
4. L. D. Francis. The Effect of Dehydration upon Vitamin-B Content of Pumpkin. *M. A.*, 1922 (University of California).

7. *Studies on infant and child feeding.* This division of the field is logically only a part of that dealing with the biological analysis of foods, but is of sufficient interest in itself to command special attention. Most of the work in this line done by home economics specialists has now be-

come social in character, and has taken on the form of the well-known "nutrition" class or clinic. As examples of the scientific type of research which may be carried on, however, the following titles are given:

1. R. Wheeler and A. Biester. Nutritive Value of Some Proprietary Infant Foods. *Am. J. Dis. Child*, 7, 169 (1914) (University of Illinois).
2. R. Wheeler. Nutritive Value of Some Proprietary Infant Foods as Milk Modifiers. *Am. J. Dis. Child*, 9, 300 (1915) (University of Illinois).
3. A. L. Daniels, S. Stuessy and E. Francis. Nutritive Value of Boiled Milk. *Am. J. Dis. Child*, 11, 45 (1916) (University of Wisconsin).
4. A. L. Daniels and H. English. Simple Method of Modifying Milk, *Am. J. Dis. Child*, 17, 212 (1919).

No claim is made that all work of this kind reported from home economics laboratories is listed in the preceding discussion. It is likely, however, that the omissions have not been numerous. A considerable volume of investigation in this field has been carried out by women primarily interested in home economics but working in other departments or under men of high rank in medical and chemical laboratories. This valuable body of research is not here credited to home economics, but only those pieces of work are so credited which were conceived and carried out by home economics women working in their own laboratories. The list is not a negligible one, either in size or in variety or in value, but the committee feels convinced that it is too short, and that it could well be lengthened by home economics departments as now organized by the exercise of courage and careful planning.

TEAMWORK IN THE FAMILY

REBECCA J. GRADWOHL

"If I left, your mother would cry her eyes out," declared Mary Jane, the maid, to Phyllis, her confidant in all affairs domestic. This was but the beginning of Mary Jane's discontent which increased until she was finally given notice, and mother decided that for a time at least there should be no more Mary Janes. She called to her aid Phyllis, aged nine, her sister Aline three years older, and father. A session was held, and the result was a unanimous decision to join forces with specialized help in running the machinery of the home themselves. In other words, they determined that as they were all able-bodied and will-

ing, they would do what they could by teamwork, and leave the rest to specialists called in by the day or hour.

It was winter when the plan was started. The house having no furnace, was heated downstairs by open fires, and upstairs by a coal oil stove. Father's duty was to bring up coal from the basement each morning, and to keep the oil stove filled. Phyllis made her bed and dusted the upstairs sitting room. As Aline devoted one hour each morning to her music, she could rarely do more before school. The breakfast was prepared by mother. When the children had gone to school, she washed the dishes, tidied the kitchen, prepared the vegetables, and often made a pie or cake for the evening meal. Then she dusted living and dining rooms. The upstairs work, including the mopping up of the bathroom, occupied an hour more, and by ten o'clock she was ready for market. Food was bought for several days, thus eliminating the necessity of daily marketing. Twice a week, the children took their lunches to school, leaving mother free to lunch downtown, do her shopping, or pay a social call until half past two o'clock. On the days the children came home, she rested after lunch, then sewed and read, and occasionally invited friends to come in for an informal visit. The evening meal did not, as a rule, require more than an hour in the kitchen. The little girls set and cleared the table, and together they washed and dried the dishes.

The remainder of the housework was done by specialists. The washing was sent to the laundry. Once a week a Japanese boy vacuumed the rugs, polished the floors, scrubbed the kitchen, and thoroughly cleaned the pantry.

Of course, mother was not so free to come and go as she had been with a maid but she had more time to read, to take up French and to become acquainted with her neighbors. These neighbors were pleasant and helpful. Like herself, several of them were managing their homes without maids. They suggested that, if they were at home any afternoon, the children come to them after school; then mother need not hurry home. The offer was eagerly accepted and reciprocated to the advantage of the neighbors.

Another delightful and old-fashioned phase of life sprang from the family's solution of the help question. Mother found that a number of her friends, experimenting in running their households without maids, had no kindly disposed neighbors; so she proposed that when a friend came for the afternoon the children accompany her. The proposition

was accepted, and the children played happily outdoors or upstairs, while their mothers chatted and sewed.

Advantages accrued to Phyllis and Aline from this solution of the help problem. The sense of responsibility strengthened their character; the duties were lessons in household training; the experience supplemented theory. Aline, whose school curriculum included cooking, was given the opportunity to test her knowledge at home. Mary Jane had allowed no school girl to experiment in her kitchen, but mother not only permitted but encouraged her.

This teamwork proved economical too. The extra laundry bills and the sum paid specialists about equaled the maid's wages, but the cost of her board was eliminated, as well as much waste and extravagance. Consequently, mother had quite a reserve sum in her purse at the end of the month.

Aline and Phyllis were remunerated for their work. Mother gave each child twenty-five cents a week for services in general. Father paid for specific duties fulfilled. The making of a bed each morning was six cents a day; the dusting of a room, three cents; washing the bathtub, two cents; sweeping the front steps and sidewalk, three cents. An account of these daily earnings was entered in a little book, and each week it was presented to father who audited it, and paid them in a business-like manner.

To mother the sweetest part of this coöperation on the children's part was the willingness, independent of reward, with which they helped carry out her plan. To them it was a game to be played, and they played it happily and freely with mother and father as participants. Possibly their method would not have succeeded had the children been too young, for mother could not have carried out her plan without their aid. But under the conditions described it proved a success. It incurred no hardship, no undue burden; rather it resulted in much happiness, much genuine comfort, and a return to those old-fashioned virtues that blossom best in a soil of mutual helpfulness and thoughtfulness.

EARLY ENGLISH CUSTOMS

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Once upon a time, when the world was young, and the battle of Hastings was perhaps in the making, Old England's homefires burned none the less brightly than today. But the fireplace was different. Let us peek for a bit into an old Saxon manor, a village in itself. Here, around a courtyard, clustered spinning house, bake house, and brew house; farm buildings reared their thatched roofs skywards; oxtalls, pigsties, and slaughterhouses hobnobbed with sheep and doves; a tiny chapel nestled in its niche. One postern gate, jealously guarded, gained admission to the whole. Did not De Bois Guilbert and the jolly Prior of Jorvaulx sound their horns full loudly at the gate, before entrance was granted them to Cedric's Hall? Nor was it any easier to venture outside that barred door, when once within. Only a bribe to the swineherd, be it remembered, could lift that magic lock to the disguised Ivanhoe, on his early morning departure.

Such an estate is the Baronial Hall of Penshurst, in Kent. This structure shows the original architecture unsullied by our modern touch. The hall is large and spacious. The lofty arches of panelled oak give it great height. The floor is brick; probably in early periods it was strewn with rushes. In the center of the floor is an octagon shaped space, about one and one-half yards wide, marked out with a rim of stone; inside is a massive old fire dog. Smoke from the fire ascended through a hole in the roof. From one end of the hall, large Gothic windows look down on the room; two long tables of split oak border either side of the hall. Here on rough benches, the family retinue, and lesser guests munched their brawn and drank their ale. My lord and lady of the manor dined on a raised platform or dais, at one end of the room. At the other, a tall wainscoat "screen" supports a music gallery. The space beyond is a concealed passage where basins of water were provided for the underlings to wash their hands. The guests were served fingerbowls.

The Saxon kitchen was a large room, sometimes thirty feet square, with an open drain running through its center. As many as three fire places were often in use at once. The smoke from the blaze escaped through the center of the roof. Before these fires the poor kitchen

scullions crouched upon their haunches, and turned the spit. Old pictures show a long rod, horizontal with, and a few feet from, the floor, propped up by rests. At either end was an unfortunate youth, turning the heavy iron which held speared a string of fowl for the coming meal. Charcoal fires gleamed red under the sizzling meat. Wood was gathered from the nearby forest, and thorns for crackling under the pots. Coal was a thing unknown. Huge cauldrons of iron and copper reflected the glow of the ruddy blaze.

Dinner, the formal meal of the day, was served about ten in the morning. Tables, like long trestle boards, were placed down the center of the room. Handwoven linen tablecloths covered their rough ugliness. The diners filed to their places "in the order of their going." First came the master of the house and his guests. His secretary pompously led the retinue of chancellors, marshalls, steward, master of the horse, chaplain, and choristers chanting grace. Then followed the constable, pages, trumpeters, and finally the jester. When all the guests and retainers were assembled, the master steward knocked loudly on the table, and the blessing was chanted. The alms dish was then brought forward. "To serve God first" was the motto, and no food was touched until a loaf of bread was placed in the alms dish. This was in constant circulation for further contributions, during the meal, for the benefit of the deserving poor at the gate.

The salt cellar, sometimes of gold and fashioned in strange devices, played an important part in the seating of the guests. It was placed midway the table, as a boundary of distinction. All seated between it and the head of the table were marked guests; those of inferior rank sat below. The modern superstition about salt dates from this period. It was the custom to throw a pinch over the left shoulder, or to help oneself, muttering a blessing, and it augured ill to spill any, or to help another.

Ladies and gentlemen sat side by side at table, so that they might share the same plate. An old book of "Courtasye" warns one, "If you eat with another, turn the nicest pieces to him, and do not go picking out the finest and largest for yourself."

With all the guests seated at the table, a blare of trumpets announced the dinner. A train of servants entered, bearing pewter platters with huge joints of meat, and fowl and game were carried in on spits. Each guest helped himself by tearing off his meat with his hands. Small wonder there was need of fingerbowls! Each person brought his own

knife and a whetstone hung near each chair, lest the steel prove too dull. The pastries and loaves of bread were not forgotten. Wine, ale, and beer were served in silver cups to those above the salt cellar; those below, quaffed their thirst in pewter or in horn. Three hours or more were given over to the feast while jesters, tumblers, jugglers, and minstrels amused the guests.

Not so much ceremony was manifest among the lesser nobles. But we know that the country franklin was "Epicurus' own son."

Withouten bake mete never was his hous,
Of fish and flesh and that so plenteous
It snewed in this hous of mete and drink
Of alle dainties that men coud of thinke.
Woe was his cook but if his sauce were
Poinant and sharpe, and redy all his gear.¹

The absence of vegetables is noticeable in the dietary. Potatoes were at that time unknown. Cabbages were imported for the next three hundred years. Considering the amount and kind of food served, it is small wonder few lived to reach old age. The poorer folk were better off. Albeit their food was limited, the black bread, peas, and bacon proved a more balanced ration than that of their aristocratic neighbors. Contrast this living with that of their feudal lords, who breakfasted at seven on white bread, beef, and wine, dined at ten, supped at four, and between eight and nine partook of a "reve-supper," an evening collation of bread, ale, and spiced wine.

The housewife of the period was in full charge of her household. An extract from the diary of Elizabeth Woodville, queen to Edward IV reads:

6.00 A.M. Breakfast. Buttock of beef rather too much boiled, and the ale a little the stalest. Memo. to tell cook about the first fault, and to mend the second myself, by tapping a fresh barrel directly.

10.00 A.M. Went to dinner.

7.00 P.M. Supper at table. The goose pie too much baked, and the loin of pork almost roasted to rags.

Gifts of eatables were common forms of courtesy. One donation given by the Mayor of Coventry to Margaret of Anjou on her sojourn through that city is listed as "three hundred loaves of fine bread, a pipe of red wine, a dozen capons, a dozen grete fate pykes." Such a donation

¹ Chaucer: *Canterbury Tales*.

would be rather appalling in this day, even with our modern cold storage facilities. But travelling, at that period, included a large retinue; inns were few and far between, and the food served there questionable; therefore the cook with his pots and pans, was an important item in the "companie."

William the Conqueror brought a full kitchen force with him to England. A glance at one of his menus makes one feel that his warriors won their battle on the field of Hastings with the meal in prospect, for, having once consumed it, there could have been little incentive for aught else. An example of one of his meals runs:

First course: Boar's head with its tusks in its snout, garnished with flowers.

Second course: Venison, cranes, peacocks, swans, wild geese, kids, pigs, and hens.

Third course: Spiced and seasoned meat, with wine, red and white.

Fourth course: Pheasants, woodcocks, partridges, larks, plovers.

Fifth course: Sweetbreads, white powder (sugar?).

The peacock was a favorite dish, and was often skinned, cooked, and then put back in its glowing vestments again. Birds were served in their "coffyns." Here we get the evolution of our modern pie. After a joust-at-arms a banquet was often served. Among other foods, a peacock, still in its plumage, was placed in a "coffyn of paste," the neck erect, tail expanded about the crust, and comb richly gilded. Carried into the hall on a silver dish, heralded by a blast of trumpets, it was placed before some knight, victorious in the day's tourney. "Rising, it was the custom to break the crust, vowing at the same time to rescue some captive lady from some mythical monster, or die though his vow, like the pie crust, was made to be broken."

Books of etiquette of the period indicated close attention to manners, although in reading them one feels the rules should pertain more to children than to adults. One reads "Set never on fish, flesh, nor fowl, more than two fingers and a thumb. Look they nails be clean lest they fellows loathe thee." A conservative statement admonishes one "if thou spit on the table thou shalt be considered discourteous." The aspirant for food should "nurture it," and not cram his cheeks like an ape, nor yet must he blow upon it. There were requests not to turn back to your plate the food you have just put in your mouth, nor to offer another person the remains of your pottage. Not to eat too much cheese, nor to take more than two or three nuts when placed before you, were more

esthetic mandates. We find suggestions, that the mouth be wiped before drinking, lest grease go into the wine, "which is displeasing to those who drink from the same cup."

The nun in *Canterbury Tales* seems to be perfection in all that should be:

She let no morsel from hir lippes falle
Ne wette hir fingers in hir sauce depe.
Wel koude she carie a morsel and wel kepe,
That no drope ne felle upon hir breste.
Hir over lippe wypped she so clene
That on hir coppe ther was no ferthy sene.

Recipes have come down to us from such interesting books as the "Form of Cury," a cook book compiled by the master cooks of Richard II. One curious combination is a dish called "Cockyntrice." The cook is directed to take a capon, scald it, clean it, and "smyte it in two at the waist," and do the same to a pig; then sew the forepart of the capon to the hind part of the pig, and the forepart of the pig to the hind part of the capon, and stuff them. For stuffing, one may "pound an ounce of pepper, honey, and wine. Make it hot. Break a dry biscuit into bits and mix. Stir with a twig of green laurel, and boil until all is thickened."

"Montreuse" was a favorite dish eaten with a spoon. The *Canterbury Pilgrims* were not without their knowledge of it. Their "coke," be it remembered, could "maken montreuse and wel bake a pie." The recipe reads, "Take hens and pork and boil them together. Take the flesh of the hens and of the pork, and hew it small, and grind it all to dust. Take grated bread, and put thereto, and temper it with broth, and mix it with the yolk of eggs, and cast thereon strong powder (a mixture of strong spices). Boil it, and put therein powder of ginger, sugar, saffron, and sale. Then look that it be stiff, and flour it with ginger powder." However stiff it may have been, I think we may feel assured of its hotness. This excess of spices must have rather overpowered the flavor of the meat. And in this, there may have been good reason, for early records show that butchers were punished for selling bad meat. At the best, their supply could not have been so good as ours, as there was no means of preserving it, except by salting it down.

There were innumerable "potages and bruets" (soups and broths) with vegetables such as leeks, onions, cabbages, peas, turnips, and parsnips. One dish known as "Joutex" consisted of violets, mallow, parsley,

young cabbage, beet, tongue, and two or three marrow bones, boiled in fresh broth and seasoned with saffron and salt. It was served with bacon.

Some of their sweets were very similar to ours. We read of cheese cakes, pancakes, and fritters. Some were made only of sugar, butter, and flour. Others boasted apples and ale, or figs in addition. A recipe for "Mylk Rosted" tells us to "Swynge (beat) eggs and sweet milk togeder, put thereto saffron, and boil it till it be thick." This suggests custard.

The use of saffron was very extensive. With cochineal, it was introduced into sugar and pastry-devices known as "subtleties." They were used for table decoration in place of flowers. One description tells of a stag made of paste and filled with claret. An arrow is removed from the stag and life blood, in the shape of claret oozes out. Large pastries were placed on either side of the stag, which on being cut, let loose live frogs and birds—verily a "pretty dish to set before the king."

Thus as we look through the dim ages of the past, we behold strange customs, foods, and ways of living. Courser and rougher, perhaps we find the people, than those that we know today, who have felt with the passing generations the softening influence of easy living conditions. We have outgrown many of the harsher traits, although we still have some buffoonery left. The necessity for the "Book of Courtesaye" we hope is passing out of existence. The better qualities of our ancestors, their courage, enterprise, and hospitality, may we always keep, and as we pass on, what may our descendants write of us? Who knows?

EDITORIAL

The Convention in the West. For two years home economics women have looked forward with keen interest to the convention to be held at Corvallis. Now that it has actually come to pass, we know that no anticipation was beyond the mark, no picture too rosy. The West has won us all—that great, beautiful country whose people measure their hospitality to match their mountains.

A feeling of power was in the group of seven hundred women who gathered at the Oregon Agricultural College. With a membership of over three thousand, with twenty-five states already affiliated and twenty more ready to affiliate during the fall, they saw the vision of the possibilities for service of such an organization. The recognition by the Board of Education of Portland, the Chambers of Commerce of Portland and Corvallis, the Progressive Business Men's League, the University of Oregon, and the Oregon Agricultural College was encouraging and gratifying.

An appreciation of the larger relationships of the Association and of every member was the keynote of the meeting. Our contribution to the health movement, to legislation, to all phases of child welfare, to problems of the home and the community were so emphasized as to challenge home economics women in whatever field they may serve. The excellent program, strong, well-balanced, and coherent, demonstrated the sound development of every section and of the Association as a whole.

The convention was a time of stimulating companionship and inspiration to the hundreds of young women who attended this as their first annual meeting. It meant renewed enthusiasm and confidence to all who have faithfully built the Association through the years. It will ever remain a gracious memory and a thrilling promise.

An Appreciation. Many persons contributed to the unusual success of the convention. The JOURNAL, as the voice of the Association, expresses sincere appreciation to all of these and especially to the following: Miss Nina Streeter, whose tireless efforts in arranging for the "Special" afforded a delightful trip across the country to the groups starting at Chicago and St. Paul; Miss Helen Davis and her committee who prepared the excellent program; Miss Bernice Waite who organized the interesting exhibits; Miss Zelta Feike whose capable management of the publicity resulted in widespread and satisfactory comments on

all addresses; to Dean Milam, her devoted staff and students, whose organization and arrangements were perfectly carried out in every detail.

Place of Meeting. The Association at the recent annual meeting accepted the invitation of the University of Chicago to hold the next annual meeting in Chicago during the early part of August, and the invitation of the National Society for Vocational Education to hold a joint meeting in Detroit November 30 and December 1 and 2. This arrangement for the midwinter meeting inaugurates a new policy of meeting from year to year with societies of related interests rather than with the Division of Superintendence of the N. E. A. The perfection of arrangements for the Corvallis meeting made very apparent to the Association the importance of making arrangements for meetings well in advance. The Committee on Time and Place for the two meetings subsequent to the Chicago meeting has therefore been asked to report at Detroit. Invitations should be in the hands of the Chairman, Miss Cleora Helbing, Louisiana State University, Baton Rouge, Louisiana, in time for action in Detroit.

The Diet of the Nursing Mother. The general prescription of a diet, during lactation, consisting of plenty of good, wholesome, easily digested food exemplifies the vagueness of our knowledge concerning the actual food needs for ideal milk production. It is known that diet has much to do with quantity of the yield and that quality is affected by the food of the mother, noticeably so in such marked cases of poor nutrition as beri-beri, pellagra and the semi-starvation of war-ridden Europe. McCollum¹ cites many instances of this kind. What a man inherits in the way of physical vigor is accepted quite generally to be largely dependent upon his food during the early months of life and even upon the state of nutrition of the mother during his foetal life. Hence we eagerly await a better understanding of the nursing mother's food requirements.

The old saying that "milk makes milk" is not true in the literal sense but the quality of the food does determine the constitution of the milk. Meigs² in summarizing the studies of the effect of changes in rations upon the milk yield of animals, makes it clear that protein plays a dominant part in the regulation of milk secretion. Greater differences

¹ McCollum, E. V., *The newer knowledge of nutrition*, 1922.

² Meigs, E. B., *Milk secretion as related to diet*, *Physiol. Rev.* 2, 204 (April, 1922).

can be made in the volume of milk by changing the protein intake to another level than by changing either the fat or the carbohydrate to a comparable degree. When the protein of the food is increased, the per cent of protein in the milk is not noticeably increased but the volume of milk is so enlarged that there is a decided increment in the total protein and other nutrients secreted for the day. This summary also states that changes in the amount of carbohydrate fed have no immediate or significant effect upon either the total milk secretion or its composition. Changes in fat intake may alter the composition slightly though not the volume of milk.

All of which hints at the light which recent experiments are shedding upon the chemistry of milk elaboration. In his review of the literature Meigs evaluates the theories concerning the source of the constituents of milk. The mammary gland manufactures its lactose from the glucose it takes from the blood. The phosphatid carried to the gland by the blood is the precursor of milk fat. The proteins are built up from free amino acids.

Many difficulties attend a quantitative determination of the food needed for the support of milk production. The available data indicate, Meigs says, that in animals it requires two grams of protein to produce one gram of milk protein and two grams of total nutrients to produce one gram of total nutrients, in addition to the food for maintenance. Probably some such ratio exists in human feeding for milk production also. The quantity of protein to be allowed in the diet would be determined partly by the quality of the proteins fed, those of an amino acid content suitable for the synthesis of milk proteins being used most efficiently. Hartwell³ reports that rats can suckle their young successfully on a low protein diet when the proteins are from a bread and milk combination. Hoobler⁴ found that proteins of milk and meat were not any more adequate for milk production by women than the protein of nut mixtures. Others have demonstrated also the satisfactory nature of nut proteins.⁵ A rather generous use of milk in the mother's food would furnish protein of a good quality to aid in forming milk proteins and to increase the volume of milk yielded; to this extent could it be said that milk makes milk.

SYBIL WOODRUFF.

³ Hartwell, G. A., Effect of diet on mammary secretion, *Biochem. Jour.*, 15, 140 (1921).

⁴ Hoobler, B. R., The effects on human milk production of diets containing various forms and quantities of protein, *Amer. Jour. Dis. Child.*, 14, 105 (1917).

⁵ Editorial, Nuts for our proteins, *Jour. Home Econ.*, 13, 232 (1921).

The Textile Collections in the United States National Museum. It may not be known to many readers of the JOURNAL that there have been developed, in the National Museum at Washington, collections of raw fibers, woven and knitted fabrics, and other articles bearing on the textile industry. Since this industry ranks first in the number of wage earners employed, and is only exceeded by food-stuffs and the iron and steel industry in the value of the products produced, the exhibits in the National Museum are arranged to show the American citizen what the textile industry means to him and to the United States.

The collections are arranged to show what raw materials are used and how these are worked up into yarn and cloth; the types of fabrics manufactured for special uses, how these are constructed and decorated, and to what use these fabrics are put. Through the coöperation of a number of the best American manufacturers of textiles, new fabrics are shown to the public as soon as they are brought out and very often before they have become generally known.

The National Museum is a Government bureau under the administration of the Smithsonian Institution, and to it is assigned the care and preservation of all objects of scientific interest presented to our Government, or acquired as a result of the expenditure of Government funds, when such objects are not in actual use by some other bureau or governmental body. Although but one of the important functions of the Museum, this one, in which it serves as a place of deposit of valuable historical records in the form of actual specimens, is very generally overlooked. Some of the material thus acquired is of popular interest and is made use of in the installation of exhibits arranged and labelled to attract the attention of the average visitor. The greater part of the national collections, however, are not on exhibition in the general sense, but are kept in special rooms for the use of the technical and scientific student and investigator.

The textile collections are developed along this same general plan and have been arranged in an exhibition series and a technical or reference series. The part of the collections shown to the general public and exhibited in glass cases are arranged in the following seven main groups:

(1) The source, preparation, and manufacture of the most important spinning fibers: cotton, wool, silk, flax, hemp, and jute. (2) The manner of making yarn, thread, cloth, felt, and lace, shown by models, photographs, and some full-sized machines. (3) Woven structures, typical weaves, and standard fabrics, arranged according to construction

and use. (4) The ornamentation of textiles by dyeing, block and roller printing, stencilling, weaving, and embroidery. (5) The use of fibrous materials for hats, baskets, mats, brooms, and brushes. (6) Cordage fibers for all sorts of twine, cords, ropes, and examples of the uses to which they are put. (7) Important textile inventions, such as the first cotton spinning machine made in America; original model of Whitney cotton gin; the first sewing machine to sew a seam, etc.

The technical or reference series of the textile collections is the one most likely to be of interest to teachers of home economics. It chiefly comprises a comprehensive and constantly increasing collection of authentic examples of raw fibers and textile fabrics. Specimens in the exhibition series are replaced by new ones as often as necessary to keep the exhibits looking fresh and representative of patterns and designs on the market. The specimens so replaced are then put in the technical series and kept as a record of changes in the industry. These specimens also form the basis of a textile glossary, now in course of preparation, which will be based, as far as possible, upon actual specimens. Now that standard methods of examining and testing fabrics for count, weave, strength, and wear, are being adopted, it becomes all the more necessary that the fabrics themselves be standardized and known by distinctive names. The National Museum is endeavoring to collect and preserve examples of all types of fabrics put upon the market from time to time.

The National Museum wishes to be of service to teachers of home economics and invites all who visit Washington to examine the national collections. For those who cannot avail themselves of this pleasure, the curator and his assistants will be glad, as far as time and the equipment permit, to identify and compare with the textiles, in the Museum's collections, any samples submitted by teachers or other workers in home economics.

F. L. LEWTON,
Curator, Division of Textiles.

OPEN FORUM

The Service of the Library to the Home Economics Department.

Books on home economics, in common with those of other subjects, do not include all the material needed in the class room and consequently supplementary material must be used. Pictures, lantern slides, educational exhibits, clippings, pamphlets, books, all these may be put to use

in widening and deepening the instruction in the home economics department and in creating a greater interest on the part of the students in preparing assigned topics.

Sources of pictures are duplicate copies and odd numbers of old magazines, picture sections of newspapers, sets sent out by manufacturing firms, pictures of the furnishings of different rooms in the house, pictures of costumes, particularly historical charts and bulletins.

Sometimes the history and geography departments have lantern slides to illustrate interior decoration, costume, and the cultivation and manufacture of commodities. Look over the catalogs of different firms dealing in lantern slides and you may find some that are exactly what you need.

Clippings from newspapers and magazines will increase the resources of the library especially on many small, relatively unimportant subjects or on new subjects about which there is little information. When more information is available these clippings may be thrown away. Pamphlets offer a mass of material singularly useful. They are issued by manufacturing firms, the federal and state governments, home economics departments, and agricultural experiment stations. Be on the watch for notices of valuable pamphlets. The monthly catalog of United States public documents and the monthly catalog of state publications, both obtainable from the Superintendent of Documents, Washington, D. C. are invaluable. The Booklist each month has a list of pamphlets, and the JOURNAL includes pamphlets in its bibliography.

Catalogs of firms dealing in refrigerators, heating apparatus, and other household equipment may be kept for the use of home economics classes. Certain magazines should be subscribed for regularly, and the back numbers kept on file. Many of the magazines, devoted almost exclusively to fashions, are quite expensive and of only temporary use. It is more satisfactory, especially with limited funds, to buy at local news stands only those numbers needed. Three or four different magazines thus obtained for fall, winter, and spring use would give a wider choice than if only one such magazine were subscribed for regularly.

Books must be bought for the home economics department. The several volumes of the United States Catalog will give the author, title, and publisher of books published some time ago; price is also given but this must be looked up in the Publishers Trade List Annual, latest edition, to get the corrected price. The Cumulative Book Index will help in selecting recent books. The Book Review Digest, with its

descriptive notes and abstracts of book reviews, which have been published in a selected list of magazines and book sections of newspapers, is an almost indispensable aid. Plus and minus signs are used to show whether a review is favorable or unfavorable.

After the books have been received, the librarian sees that they are adequately cataloged for circulation and are delivered to the teacher of home economics. Reserve shelves may be set apart in the library.

Pictures and clippings may be kept in a vertical file, classified by the decimal classification or arranged alphabetically by subject, using the subject headings of the Reader's Guide. Pamphlets may be kept in pamphlet covers and cataloged, provided they are likely to be in rather constant demand; those of less value may be kept in a pamphlet box with books on the same subject, and entered under the general subject only in the catalog; or they may be kept in a vertical file arranged like the pictures and clippings.

If the library is to be of the highest value to the students each one must know how to use it. Sometimes the English and history departments give half or whole recitation periods to the librarian for this instruction. Why should not the home economics department do this? The librarian, not the teacher, should give the instruction in the rules of the library, the location of books, the use of the catalog, and the finding of books on the shelves. Later on, the use of common reference books and of magazine indexes should be explained. By means of this instruction, the students can readily look up material for topics, not only in the high school library but also in the public library used to supplement the school library.

MARY JOSEPHINE BOOTH,
Librarian Eastern Illinois
State Teachers College.

BOOKS AND LITERATURE

Foods of the Foreign Born in Relation to Health. BY BERTHA M. WOOD. Boston: Whitcomb & Barrows, 1922, pp. 98. \$1.25.

In her work as dietitian for the food clinic at Boston Dispensary, Miss Wood has an enviable opportunity for intimate study of the food habits of a large number of our foreign born peoples. The contrast made by the physically sound, well developed immigrants to the pale under nourished children found in these same groups, after a short time of residence in American cities, has struck every one who comes in close contact with them. Miss Wood says: "the Polish children and those of other Slavic peoples come from a sturdy race. Upon arrival in this Country they have round, well shaped heads, rosy cheeks, and strong bodies. With their kerchiefs over their heads they make a fascinating picture of health. They have an abundance of mild and fresh air in their own countries. Here they live at first in crowded districts and milk is counted as a drink, not something to eat; they eat what the grown ups have and they pay the price."

The poorer food doubtless accounts partly for these changes. Recognizing the difficulty encountered by people with limited experience, narrow knowledge of food materials, and small income in changing their food habits, Miss Wood presents material designed to help the nurse, teacher, dietitian, and social worker who are trying to help them make the adjustment. A brief account is given of the native foods and the manner of their preparation for the followings groups: Mexicans, Portuguese, Italians, Hungarians, Poles and other Slavic peoples, Armenians, Syrians, Turks, and Greeks.

The book contains a number of recipes, for each nationality, in which American food materials are used. Many of the recipes are of elaborate dishes which would consume much time and better equipment than the households of most immigrants contain. The book would perhaps be more valuable if greater space were given to the simpler

dishes. The latter are, however, not entirely neglected, and examples can be found for each nationality.

A special valuable feature of the book is the compilation of diets adapted to each nationality, and recipes for such diseases as diabetes, tuberculosis, and nephritis.

Throughout the book emphasis is laid on the desirable points in the diet of each group and use of them in constructing a new dietary which will be possible under the conditions the immigrant finds here. It is a valuable contribution to the scanty literature on the subject, greatly needed by those who are trying to help the foreign family make the necessary changes in their habits. Too frequently the worst of our American customs, instead of the better ones, are adopted.

FLORENCE NESBITT,
United Charities of Chicago.

The Vitamines. By CASIMIR FUNK. Authorized Translation from the Second German Edition by Harry E. Dubin. Baltimore: Williams & Wilkins Co., pp. 502, 1922. \$5.50.

The development of our knowledge of the deficiency diseases and the relation of the vitamins to them has been one of the striking features in the development of the science of nutrition in the past decade. Less than ten years ago in October, 1913, Dr. Funk made one of the pioneer attempts to collect the facts, weld them into theories and to suggest new lines of research in the field of vitamins, and the first edition of the present work resulted. Since that time, vitamin studies have multiplied, as is attested by the extensive bibliography of more than sixteen hundred titles in the present edition.

Two other monographs on vitamins have appeared in this country recently, but the present volume is more extended in scope than either of the others. On the other hand, it reflects more closely the views of one man on the subject although the citations from the literature are extensive. As Dr. Funk himself admits in his preface, he

feels "justified now in reviewing only those investigations the viewpoint of which is not too far removed from ours.". Dr. Funk is a vitamin enthusiast and in his desire to include all vitamin material, has discussed certain diseases, the relation of vitamins to which is problematical at present. Especially is this true of those included in the last two chapters, as, for example, pneumonia, anemia, exophthalmic goitre, and diabetes. Particularly interesting to the reviewer is the discussion of that peculiar disease of the South African cattle, lamziekte, pica, or, as recently discussed by Dr. Green, osteophagia. The inclusion of many of these diseases of doubtful etiology has added greatly to the value of the book.

Throughout, Dr. Funk has preferred to retain the name "vitamines" originally suggested by him in 1912. He points out that the fact that it has become popular, despite efforts to supplant it, proves its

desirability, as "a badly chosen catch word like a folk song without feeling can never become popular."

The subject matter is divided into three parts: "the vitamine requirements of plants and animals; chemistry, physiology, and pharmacology of the vitamins; and the human avitaminoses—conditions in which the vitamins play a role." In the first part, a clearer differentiation of the quantitative variations in the vitamin requirements of different species would be desirable. This variation as pointed out recently by Mitchell in *Science* has led to no little confusion.

Throughout, the translator, who is fortunate in his personal association with Dr. Funk in his researches, has caught the spirit of the author. The book well deserves a place on the shelves of all nutrition libraries.

HOWARD B. LEWIS,

University of Michigan, Medical School.

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NEWS FROM THE FIELD

COLORADO

Colorado Agricultural College. Two important conferences were held at the College during the Summer Session. At a five day conference of teachers of vocational home economics, field problems were discussed and plans made for a state survey and the development of a state course of study. During two weeks, beginning July 17, the Southwest Division of the American Red Cross and the Colorado Agricultural College conducted a joint Institute for Public Health Nurses, the Department of Home Economics serving as the main college representative. The states in the southwest were well represented.

The Health School, in which were enrolled girls and boys between the ages of nine and twelve, was a feature of the summer session. It served to stimulate interest in health habits in the children enrolled, and aroused a like interest in members of the dietetics class who assisted in the preparation of the Health School lunch. In previous years the department has conducted similar classes.

NEW MEXICO

Summer Work. Instruction in vocational home economics at Alamogordo does not cease with the closing of the high school in May, as Ruth Ann Morgan, who has charge of the work, is employed on a twelve months basis. Through home project work and home visits during the summer, home economics has become a community influence.

Following are some typical projects: Family laundry for a family of five; cleaning and renovating of hat; preparation and serving of dinners for a family of five; daily and weekly care of bedroom and clothes closet; garment construction, 1 dress, 2 petticoats, remodeling of 1 dress; cleaning, pressing, and storing of winter clothing; care of three year old child for one week; planting and caring for small vegetable garden for

9 weeks; Saturday baking for four weeks; laundering of own clothes for 6 weeks; canning of 12 quarts of peaches; preparation and serving of all meals for family of six for one week.

NEW YORK

Teachers College. The Summer Session has been a busy one in the development of research projects in the department of physiological chemistry. Work on the cabbage vitamin has proceeded and the results will soon be published in this Journal. Not only have definite conclusions been reached as to the effect of cookery upon the vitamin in this vegetable, which will be of value to the housewife, but much has been added to our knowledge of the conditions which affect this vitamin in general. The department will cooperate with the Canner's Research Laboratory to carry the studies into the field of canning.

Our studies in the field of vitamin B. have been advanced. During the coming year the department expects to make some definite contribution to the chemical nature of this substance. Dr. R. R. Williams has cooperated actively in this work.

Another piece of work that promises practical results of general value has been a series of studies on the relative nutritive value of white flour breads prepared by standard and modified recipes. In this work the department is uniting forces with Professor Rose and the department of nutrition.

Rena Eckman has completed the study of the peanut flour utilization as a source of protein and this combined with previous studies on vitamin content and recipe combinations is ready for publication.

The present policy of the School is proving most satisfactory in enlisting the cooperative efforts of the various departments of practical arts and in securing active participation of graduate students, who are thus enabled to have first hand contact with problems

that arise in this field. The variety of interest that this work arouses is also of value in the teaching development, for the students of regular courses are able to follow the experiments as observers even if they do not participate directly.

Budget Service in Banks. Fifty requests for admission were received by the Department of Household Economics at Teachers College, following its announcement of a Summer Session course of training for budget work in banks. Eighteen applicants were accepted, the majority being with a broad background of home economics training and experience. Banks in Minneapolis, Washington, New York and Waterville, Maine, arranged for women in their personal service departments to take the course, and several applicants were admitted because of exceptional qualifications of experience in banking or in social work.

All members of the group took the regular course in Budget Methods which has been given at the college for several years, and also a special series of fifteen lectures on problems of work in banks, arranged by cooperation with the Women's Division of the National Association of Savings Banks.

Ten hours a week were spent in field work under Personal Service Directors in four savings banks in New York, and twice a week these experiences were discussed at round table meetings.

The Savings Service Bureau, conducted by the class at Columbia for four days near the end of the Summer Session, provided a special opportunity for budget advising and for exhibition work. Observation of desirable methods of popular thrift instruction was made possible through public exhibits and demonstrations arranged on three successive days by the Departments of Household Administration, Textiles and Clothing, and Foods and Cookery.

In Hotel Management, August, 1922. Grace M. Aird describes the educational work with the employees of the Hotel Pennsylvania, New York. English is taught to the non-English speaking employees.

The head of each department instructs every one of his workers. Both untrained and experienced workers are subject to constructive criticism of those whose business it is to make all departments efficient. Weekly meetings are held by the head housekeeper for the purpose of giving instruction in good taste and cleanliness. These meetings are supplemented by personal guidance and practical demonstrations for the training of chamber-maids and bath-maids, and by printed directions. Every service is standardized and an understanding of the dignity and importance of each piece of work is developed in the worker.

OHIO

The Ohio Home Economics Association will hold its first meeting of the year, Saturday, October 7, in the Women's Club Auditorium, Dayton, Ohio. The subject of the meeting is "Scientific Feeding of the Public." Mr. John Willy, Editor of the *Hotel Monthly*, is to be one of the speakers.

PENNSYLVANIA

Pennsylvania State College. More than 50 courses in home management and allied subjects are to be given by the Department of Home Economics during the coming year. Among the subjects to be offered are primitive industries, elementary handwork, fine needle work, special methods and practice teaching, dress-making, dress design, millinery, clothing conservation, textiles, children's clothing, meal planning and serving, household finance, food preservation and demonstration cookery, child welfare and home nursing, history of cooking and table service, cookery and foods, nutrition, institutional housekeeping, school lunch, catering, cookery for men, institutional administration, dietetics, and methods of teaching vocational home economics.

In order that the Department of Home Economics, in common with the other schools and departments of the college, may be expanded, it is planned to develop the institution into the Pennsylvania State University, with facilities to accommodate 10,000 students.

TEXAS

A Cooperative Experiment. A dietetics class and a practice teaching class of the Home Economics Department, and the School of Public Health Nursing of the University of Texas have cooperated in a piece of work centering around the nutrition and health problems of a Mexican community. The problem has been attacked from two angles: the first, a nutrition class conducted by a group of Public Health nurses as part of the laboratory work of their class in dietetics; the second, a cooking class for mothers of children in the nutrition class, conducted by one of the practice teachers in the home economics department.

The nutrition class was made up of those children who were found to be 10 per cent or more underweight as determined by the public health nurses in their survey of the Mexican primary school. Twenty-two per cent of the children attending the school belonged in this group. The class was organized and conducted by the nurses taking dietetics, under the supervision of a member of the home economics department. The class work consisted of the teaching of better health and food habits through talks, stories, and charts. The children ranged from eight to thirteen years in age, but methods suitable for the youngest children proved most satisfactory for the group as a whole. The usual stories were modified when it was found that the Mexican children are unacquainted with fairies. The class work was followed up by visits to the homes. A record, as of "case work," was kept of these visits.

The work of the foods class for the mothers was outlined on the meal plan. The presence of several small children made necessary the adaptation of adult food for children, and there was more than one occasion to illustrate how children may be induced to eat foods which they had at first refused.

UTAH

Home Demonstration Work. The appointment in June of three district home demonstration agents by the college board

of directors is an indication of the growth of home demonstration work in Utah. These agents are Lillian Elder, Katherine Adams, and Mrs. Christine B. Clayton. All three are graduates of the Utah Agricultural College, have taught for several years in Utah high schools, and have had experience in social group work of various types. The acquisition of additional workers at this period of financial depression is looked upon as a response to the genuine interest and demands of the women of the state for more home demonstration work. Organized and progressive project work has extended from five counties to seventeen counties within the space of two years.

NOTES

Ellen Brewer has accepted the position of Professor of Home Economics at Meredith College, Raleigh, N. C.

Lillian Brice is an instructor in household arts at Hood College, Frederick, Md.

Florence Churton, formerly of the University of Illinois, is an instructor in the Southern Branch of the University of California, Los Angeles.

Lucy Comfort is now an instructor in foods and cookery, Russell Sage College, Troy, N. Y.

Harriet Glendon is Assistant Professor at Margaret Morrison College, Carnegie Institute of Technology, Pittsburgh, Pa.

Mary Edna Groves has been appointed Supervisor of Home Economics in the Indian Schools of the United States. She is the first woman to hold this position. Her headquarters are Haskell Institute, Lawrence, Kansas.

S. Deborah Haines is head of the Department of Home Economics, State Normal College, Ypsilanti, Michigan.

Julia McIntyre is an instructor in home economics at the State Normal College, Ypsilanti, Michigan.

Helene Pope is the new head of the Department of Household Arts, University of Iowa, Iowa City, Iowa.

Edith Ranne has been appointed Assistant Professor of Home Economics, North Carolina College for Women, Greensboro, N. C.

Child Health Program. The Commonwealth Fund has decided to finance a thorough child health program in three typical cities for a period of five years. The general qualifications of the first city to be selected are that it should be from 15,000 to 25,000 in population with an infant mortality of approximately 100 per 1000 live births or greater. The Committee has decided that the first city to be assisted in developing a thorough program for child health will be selected from the upper half of the Mississippi Valley region. The program will comprise safe-guarding the health of the mother-to-be, laying a good health foundation for children in the early sensitive and formative period of their growth and health supervision, and the formation of the essential health habits in school children. The responsibility for carrying out this child health program is placed upon the American Child Hygiene Association and the Child Health Organization of America.

The Committee in charge of general plans and policies say: "The work will be so developed as to enlist the coöperation of physicians, public health nurses, school nurses, and all other individuals and agencies interested in health and child welfare in the communities selected. The interest and coöperation of teachers in the school health program will be vital to the success of the undertaking. No fund can finance a health program in every nook and corner of the country, but if the cities in which the demonstrations take place devote every available resource to making them practical working programs for all communities, the Commonwealth Fund will have made possible a long step forward to bring health and happiness to every child.

Lantern Slide Lectures on Child Welfare. The National Child Welfare Association has arranged a series of lectures for presentation in meetings especially arranged for their use or in programs of regular gather-

ings under the auspices of churches, clubs, schools, community centers, health centers, settlements. The material for each lecture consists of fifty of the highest grade colored lantern slides, complete manuscripts, brief introductory address for use by the chairman of the meeting, directions for the most effective presentation of the slides, outlined newspaper announcements and press notices with which to arouse interest in the meeting. The first lecture is "Child Welfare—Everybody's Business," the second "Makers of American Ideals," and the third "Welfare or Warfare." Further information may be obtained from The National Child Welfare Association, 70 Fifth Avenue, New York City.

The Pan American International Committee of Women, created by the Women's Auxiliary Committee of the United States of the Second Pan American Scientific Congress will, for the first time, hold simultaneous meetings of its National Sections in the various capitals of North, Central, and South America on next Columbus Day, October 12, 1922. The call for these conferences, containing a suggested program, has been sent out from Washington by the Women's Auxiliary Committee of which Mrs. Charles Evans Hughes is Chairman. The aim of the conference is to further friendly relations and harmonious coöperation among the women of the Americas; to create a better understanding and a larger sympathy, thus placing international interests upon a more enduring basis.

The National Society for Vocational Education, the Vocational Educational Association of the Middle West, and the National Vocational Guidance Association will hold a Joint Vocational Education Convention at Detroit, Michigan, November 30-December 2. **The American Home Economics Association** will hold its mid-year meeting in connection with this convention. See also editorial, page 503.

FIFTH ANNUAL CONVENTION
AMERICAN DIETETIC ASSOCIATION

NEW WILLARD HOTEL, WASHINGTON, D. C., OCTOBER 16, 17, AND 18, 1922

MONDAY, OCTOBER 16

10:00 a. m. Educational Section, Dr. Ruth Wheeler presiding

The Dietitian—a History

Agnes O'Dea, Johns Hopkins Hospital

The Dietitian—A Statistical Study

Breta M. Luther, Cook County Hospital, Chicago

The Dietitian—A Prophecy

Ruth Wheeler, University of Iowa Medical College

2:00 p. m. Helene Pope, Margaret Morrison College, presiding

The Dietitian and the Diabetic

Dr. Elliot P. Joslin, Boston

A Nutrition Experiment in Industry

Laura Comstock, Eastman Kodak Company

Atmosphere and Personality in the Tea Room

Laura M. Piper, Manager, Laura Matilda Tea Room, New York City

Findings in China

Emma Gunther, Teachers College, Columbia University

Housewifery in China

Ray Balderson, Teachers College, Columbia University

7:00 p. m. Dinner Meeting, Mary de Garmo Bryan presiding

General Hugh Cumming, U. S. Public Health Service

Major Julia C. Stimson, Superintendent Army Nurse Corps, U. S. A.

Lenah Higbee, Superintendent Navy Nurse Corps, U. S. N.

Lucy Minnegerode, Superintendent of Nurses, U. S. Public Health Service

TUESDAY, OCTOBER 17

9:30 a. m. Dieto-Therapy Section, Rena Eckman presiding

The Role of High Protein in the Etiology of Nephritis

Dr. L. H. Newburg, University of Michigan Hospital

A Laboratory for the Preparation and Service of Research Diets

Dorothy N. Stewart, University of Michigan Hospital

Hospital Food Costs

Dr. Leroy E. Parkins, Peter Bent Brigham Hospital

Getting Food to the Patients

Henry C. Wright, Hospital and Institutional Bureau of Consultation, New York

2:00 p. m. Visits to Walter Reed General Hospital, and Office of Home Economics,
U. S. Department of Agriculture

8:00 p. m. Octavia Hall, Peter Bent Brigham Hospital, presiding

Nutrition and Diet in Childhood

Mary S. Rose, Teachers College, Columbia University

The Relation of Hygiene to the Growing Child

Dr. Alfred Hess, New York City

WEDNESDAY, OCTOBER 18

10:00 a. m. Social Service Section, Gertrude G. Mudge presiding

Presentation of Committee Report

Gertrude G. Mudge, Chairman, Committee on Italian Dietary Survey

The Inter-relation of the Dietitian and the Medical Social Worker

Ida M. Cannon, Director of Social Service, Mass. General Hospital

Factors other than Food in the Nutrition Problem

Lucy Gillett, Director, Nutrition Bureau, A. I. C. P., New York City

Nutritional Activities in Philadelphia

Anna Louise De Planter, Work in Child Federation, Philadelphia

Psychological Aspects of Some Problems in Dietary Administration

Dr. John B. Watson, J. Walter Thompson Co., New York City

2:00 p. m. Mary de Garmo Bryan presiding

Hunger and Thirst

Dr. Walter Cannon, Professor of Physiology, Harvard Medical School

Business Meeting—Reports of Committees

8:00 p. m. All Member Program, Genevieve Field presiding

The Food Service for Private Patients

Lulu Graves, Director Dietary Dept., Mt. Sinai Hospital, New York City

The Food Service for Ward Patients

Marjory Hulsizer, Dietitian, Barnes Hospital, St. Louis

The Food Service for School Children

Daisy Treen, Director, School Lunch and New England Kitchen, Boston

The Food Service for the Hotel

Mary Lindsley, Manager, Grace Dodge Hotel, Washington

THURSDAY, OCTOBER 19

Johns Hopkins Hospital, Baltimore**10:00 a. m. Lulu Graves presiding**

The Relation of Animal Experimentation to Dietetics

Dr. E. V. McCollum, Professor of Chemical Hygiene, Johns Hopkins Hospital

The Relation of the Medical Staff and Diet School in Johns Hopkins Hospital

Dr. William S. McCann, Associate Physician, Johns Hopkins Hospital

Afternoon in the hospital and clinic

The Washington Association is planning a number of social features and interesting trips for all persons attending the Convention. After the trips a picnic supper will be served by the Department of Agriculture and the Walter Reed Hospital on Tuesday afternoon. On Wednesday afternoon Mrs. John D. Rockefeller, Jr., assisted by Mrs. Coolidge, Mrs. Wallace, and Mrs. Cumming, will entertain at tea at the Grace Dodge Hotel.

On Thursday afternoon the Association will be the guests of the Johns Hopkins Hospital in Baltimore. After the morning program the afternoon will be spent in visiting the hospital and the medical clinic.

Efforts are being made to secure special rates, and information regarding transportation will be sent to all members of the Association.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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AMERICAN HOME ECONOMICS ASSOCIATION

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THE
Journal of Home Economics

VOL. XIV

NOVEMBER, 1922

No. 11

**PROCEEDINGS OF THE FIFTEENTH ANNUAL MEETING OF
THE AMERICAN HOME ECONOMICS ASSOCIATION**

Corvallis, Oregon, August 1-5, 1922

THE PRESIDENT'S ADDRESS

MARY E. SWEENEY

I wish you could realize just how your president feels as she opens the fifteenth annual meeting of the American Home Economics Association at Oregon Agricultural College, with its cordial hospitality and wonderful welcome; how she feels as she catches the inspiration of your hopes, your dreams, your ambitions for our professional association, your interpretation of what it ought to mean to you. It has been a great privilege and a great responsibility to be your president, to think for you and with you, to act for you and with you, to plan with you for the future.

Today, in accounting to you for my stewardship I begin to realize how little one can really do more than make a beginning in two years; how difficult it is to summarize those intangible things which are the indices pointing toward progress, development, and achievement.

After all, we need to remember that as an association we are only fourteen years old, merely in the adolescent period of our life; that for many years we were loosely organized, our purposes were vaguely defined, we lacked cohesion and large objectives; that in our state teachers colleges and in our state universities it has not been the unfailing custom to instill, into those entering the work, compelling professional motives, a code of professional ethics, unified standards of professional life.

Our professional work has had to do with the home, which as an institution is traditional and conservative. Those within it have had only a half hearted belief in homemaking as a profession and in the functioning of science in every day life. Homes are individual units; there are few ways of reaching them collectively. No outside forces connected with incomes unify their attitude, interest, and point of view, and get certain standards into their mass mind and consciousness.

To deal with such an institution, to study it, to serve it constructively, to interpret its social, economic, and moral responsibility, to help it to function

in civil life, to rehabilitate it when broken or disabled, has been difficult and at times tedious and soul wearying, but immensely alluring, demanding high spirit and courage.

The tremendous growth of home economics through its introduction into the curricula of elementary and secondary schools and universities, the development of home demonstration work, vocational education, continuation and evening schools, has created a demand for a large number of professionally trained people to build up adequate subject matter, methods, and research. A remarkable impetus was given by the war. Subsequent demands have been made for participation in health programs. Economic depression and need for readjustment and standards of buying in the home have tested home economics as a profession.

The problem always facing your executive committee and your council has been to develop a professional association which would stand for the ambitions, beliefs, ideals of the individual members, and to make the Association an instrument through which individuals might express themselves.

It has been my privilege to help to accomplish the objectives set by the association at Swampscott:

I. The organization of state associations. Twenty-five states are fully affiliated; 10 states have voted affiliation but have not yet completed it; in 10 states it is being considered; only four states have shown no interest. The membership in the affiliated states shows an increase of 300 per cent; in the southern region, 400 per cent. These gratifying results are due to the enthusiasm and belief of individual members, to the conscientious service of the committee on regional organization, and to the excellent work of regional councilors. Every state association has a representative on the council, elected by the state. She knows the needs of her state; she voices the wishes of her group. The executive committee is composed of three regional councilors, two members at large, and the officers. This insures democratic policies, a plan of work representing all interests, and a country-wide interpretation of home economics.

II. The executive secretary. The need for an executive secretary was shown at Swampscott. A committee, under the leadership of Mary Matthews has raised by voluntary subscription \$4804.00.

III. Another achievement of the year is that the Journal of Home Economics has in reality become the voice of the Association. Against tremendous odds Mrs. Bryan has brought it through the most successful year of its life. Its subscription list is now 7030. Its financial report is favorable. It has called to its service eight associate editors, representing all outstanding interests of the Association, and both the quality and quantity of material show the results of their activity.

In its legislative program the year has been one of inaction for the association. Every woman's organization of consequence and many educational

associations have endorsed the Fess Bill, though we were told by representatives and senators that it could not be passed until the Sheppard-Towner Educational Bill had become a law. The bill has served to educate members of the American Home Economics Association and organizations endorsing it to the needs of home economics vocational education, and has achieved far more than its mere passage would guarantee.

Perhaps nothing is a better index to the growth of the Association than the extent and character of its affiliation with other organizations. We have been asked to have a representative speak at national meetings of the General Federation of Womens Clubs, the Pan American Conference, and the League of Women Voters. We have been requested to assist in furthering the programs of the Parent Teachers Association, the National Congress of Mothers, the National Womens Trade Union League, the Consumers League, the National Housing Association, the Social Hygiene Association, the American Association of Social Workers, the Red Cross, the American Academy of Political and Social Sciences, the Canadian Child Conservation, and the International Eugenics Society.

While there is much to give us hope in the past there is much yet to be done, and it will take more fortitude, more faith, more steadfastness, more courage, than pioneering. All of us feel that the Association must reinterpret its objectives and develop a program of work. As a group we must broaden our contacts. The school room needs business, business needs home economics women. All home economics work needs the homemaker, both the professional home economics woman in her home, and the untrained woman in her home. We need her to show us how much that we are teaching belongs in what is now tradition; we need her to help us make our courses meet the needs of these electric-started, automotivated, radio-connected homes. She has a tremendous contribution to make to our theories of care and training of the modern child. The Association should capitalize this tremendous asset of our 10,000 trained home economics women in homes of their own. They are to be the great force within our number which will recharge, revitalize our point of view, reinterpret to us our education for homemaking.

A health program is being developed in the public schools of almost every city of the United States. In many instances physical education departments and public health nursing organizations are developing the program. Shall the home economics woman with her special training in nutrition be left out? In every state teachers association there already exists a committee on health education made up of representatives from physical education associations and The American Medical Association. Are our state home economics associations going to see that we coöperate and become a part of that committee on health education in their states? I believe the time has come for a clear statement of position of home economics: that we are not trying to do the work

of the physician, nurse, or art teacher, but our own, and to ask for a joint committee from the American Home Economics Association to work with similar committees from the American Medical Association, the National Organization for Public Health Nursing, the American Physical Education Association, the Arts Association, the Parent Teachers Association, and the National Congress of Mothers.

In many universities in this country, survey courses in home economics are being developed, yet there is no adequate history of home economics up to the present time. Many of us hope that Isabel Bevier may find the leisure to elaborate the book she gave to us some years ago on the Home Economics Movement. This is one means of developing those professional standards which will mean much to our respect for our own work.

In summarizing, the things I want to leave in your minds and on your hearts are:

1. Concentration on a program of work for the Association.
2. Capitalization of our asset of ten thousand home economics women in homes.
3. Realization of our place in the development of the health program in our public schools.
4. Study of what reasonable professional standards are to be maintained.
5. Development of a code of professional ethics.
6. Enlargement of the Journal of Home Economics which, as I see it, can be done only by having a full time editor and an adequate staff, based on the principle now operating.

Trained home economics women are demanded as teachers, extension workers, visiting housekeepers, dietitians, editors, social service workers, and in other business positions. Coöperation has begun to be established with the nursing world, the medical world, the industrial world. Home economics work is beginning in Australia, Japan, China, South Africa, India, Turkey, New Zealand. This means that home economics is preparing for its duty and responsibility; that it glimpses its opportunity; visions its real service; understands the meaning of its mission to energize, vitalize, and spiritualize the every day life of the every day man and woman.

Editor's Note. According to the ruling of the Council, only abstracts of the addresses appear in this issue. These abstracts are, in the main, those submitted to the Press and Publicity Committee. All those received before September 21 are included. A number of papers will appear in full, in later issues of the JOURNAL.

GENERAL SESSIONS

HOME ECONOMICS AND THE BUSINESS WORLD

BESS M. ROWE

Field Editor, The Farmer's Wife

This subject brings out four questions: 1. What has the business world to offer home economics? 2. What has home economics to offer the business world? 3. What opportunities are there for women with home economics training in connection with business enterprises? 4. How does the opening of new opportunities for home economics women affect the training that should be given in home economics departments.

The following points are a partial reply:

1. The money spent for advertising every year constitutes the largest and the most effective educational fund available in the country today. Advertising and sales campaigns affect every phase of home life; they largely determine the equipment in every home. Manufactured articles are largely planned, advertised, and sold by men or by women not trained in the science of home-making. Home economics cannot hope to counteract false or misleading information unless it functions through this tremendous organized educational force. The business world today offers us our most effective means of making standard home economics information really function in the homes of today.

2. Most business organizations are alert for information; there is much knowledge available that is greatly needed in the mass of homes. We have, on the one hand, a group of people eager for knowledge; we have, on the other, a group earnestly striving to spread this knowledge. It is worth going more than half way, if necessary, to do this service. We need not fear that the information will be exploited. While there has been something of this in the past, we do not find it today. The up-to-date business man has a real idea of service. As a rule we find in the business world fully as high a standard of ethics as we find in any educational or professional group.

3. A business man said recently, "The only woman who can hope to make a permanent success in business today is the woman with home economics training. A few years ago it was enough to introduce 'the woman's angle'; now it must be the point of view of the woman who is trained along home economics lines." Many of the best opportunities open to home economics women today are with business organizations. We must get away from the idea that a girl is betraying her profession by going into business; otherwise we shall find women with lower standards or poorer training taking these key positions. These openings are coming fast; they are attractive and will be filled. It behooves home economics women to encourage our strong girls to go into them if they so desire. There is no way in which we can so easily and

quickly make home economics a part of the consciousness of the public at large. The standards of the home economics woman in business will sooner or later be impressed on the minds of the general public as the standards of the whole home economics profession.

4. Our courses are criticized as being impractical. We must keep in close contact with the world outside; we must know its wants as well as its needs; we must, as far as possible, teach our girls to know conditions as they are and to adapt their training to the needs they find; in short, we must study this new manifestation of the need of home economics and we must take steps to dominate the work in this field.

WHAT THE COMMUNITY OWES THE CHILD

CAROLINE HEDGER, M.D.

Director, Elizabeth McCormick Memorial Fund Child Welfare Agency, Chicago

What the community owes the child is a rather recent thought. The child, until recently, has been the family problem, but the community now realizes that it owes the child an unimpaired heritage because the child is the community of the future. It owes him perfection of production. The time has come when we can no longer fail to face the fact that legislation must be undertaken to preclude the reproduction of the feeble minded. We owe the child the thought of the child as a part of an endless plan. There must be an understanding and a participation in race perpetuation quite consciously. The person who is elected by the qualifications of high heritage to make his race contributions must make it with an absolute faith. The child must be born in such condition that it can survive and come to perfection.

Having produced the child, the community owes the child education. Just what education means is unsettled in the minds of educators, and not all children can stand the regime which has been built up. There are special problems such as the conservation of the superior child, and the conservation of the adolescent in school. But every child must be given positive health. Teach the child those things which make for beauty. Beauty is the right of every child.

The third thing the community owes is the socialization of the child. Socialization of the child is as necessary as clothing the child. It means more than joining a church; it means getting the adolescent into the church in the right way so that he becomes a force in the community and not a church joiner just to save his own soul. It means more than vaccination and more than manners. It is the making of the child into a social unit; it is giving him some of the things he needs to work with in a democracy. He needs an ethical basis, the ability to do right because it is right. All are necessary and are the community's debt to the child.

The evasion of responsibility stunts our growth in human and in spiritual life. Responsibility involves selflessness. Underlying the responsibility of the body which is the carrier of the spirit, we should bring the child into a realization of the fact that he is the social unit and owes something to the state, to the nation, and to himself. In so doing we shall have largely discharged our responsibility to the child.

WOMEN'S PART IN THE NATIONAL HEALTH PROGRAM

ANNIE W. GOODRICH

Teachers College and Henry Street Settlement, New York City

The public health movement has unquestionably been forwarded by a steadily increasing appreciation of the prevalence of deviations from normal health and a consequent economic loss. This awareness was enormously intensified by the heavy incidence of illiteracy and physical defects revealed by the draft of approximately 2,400,000 men in the last war. A not less important factor, however, in our interest in attacking the health problem is the ever increasing body of scientific knowledge bearing upon the cure and prevention of diseases, many of which were heretofore conceived to be not only incurable, but inevitable.

Despite both these facts these conditions continue to exist. It is therefore imperative that we should mobilize every community for decisive action in this field. Such a program to be effective must enlist the universal coöperation of any given community through a campaign of education in its needs and the means through which its needs may be most effectively met. There is no more important point of attack than the direction and care of the young mother and the child in such matters as sanitary surroundings, adequate and suitable diet, and a properly proportioned daily life from the standpoint of occupation, intellectual development, recreation, and rest.

The machinery and personnel as expressed in hospitals, dispensaries, health stations, physicians, and nurses, through which adequate care of the sick may be provided, are therefore today of no greater importance than that a program of health education be provided which will insure a steadily increasing per cent of health in every child and, ipso facto, every citizen.

The participants in such a program of health education should not be limited to physicians and nurses, but should include all the ever increasing groups of health workers, such as physical directors, nutrition workers, dentists and dental hygienists, the great body of teachers at large, and above all the parents.

An effective coöperation and coördination of the machinery and personnel for such a program requires: (a) A survey of any given locality, such as the Cleveland Health Survey. (b) A carefully worked out plan under expert advice and criticism. (c) A budget covering the estimated development for a given period. (d) Methods of raising the necessary funds.

HOME ECONOMICS AND THE UNITED STATES DEPARTMENT
OF AGRICULTURE

C. W. PUGSLEY

Assistant Secretary of Agriculture

Practically all of the development of home economics, both in investigation and extension, has come within the last quarter of a century. The development of the science and teaching of agriculture covers a much longer period but it is only within the last century that scientific agriculture has been put on a sound basis. The urgent demand of the people for information has caused extension teaching oftentimes to go beyond what the existing status of research warranted. The most important needs of home economics today are money and workers for research.

We must remember though that in home economics extension we have millions of scattered homes to reach while in research we have a few score of centralized institutions to equip and maintain. The proportion of funds going to extension will therefore always be greater.

Many home economics teachers have received no intimation that the problem of the country housewife differs in any sense from the problems of the city housewife. Many have received the impression from their mothers that farm work and farm life were to be shunned by a woman. We will of course concede that many a farm woman occupies a very hard position. Her hours are long, her work hard, and her pleasures few. It is a position she can not escape. She or someone else must fill the place of the farm housewife. It is the home economics worker's job to help her shorten her hours, lighten her work, and increase her pleasures. If this can be done no work can be any more pleasing, for she has beautiful and healthful surroundings for herself and her loved ones.

As the proportion of the urban dwellers increases, the burden rests heavier on the farmer to supply an increasing amount of food. I think the last few months have demonstrated the fact that we can not secure this food supply without a prosperous, contented, and educated farm life. We cannot possibly have that unless the farm home which is the heart of farm life is placed on a very high plane.

There is no one thing which a home economics agent can study to better advantage than the labor income of her people. She must know this in order to know what to recommend for the farm living, and the things which can be done within the home are dependent to a large extent on the farm income. She must be able to show that the living condition on the farm has a direct influence on the efficiency of the farmer and hence on the income.

The farm is a complex institution. That is the reason why the farmers like a man of the farm management type to assist them in coordinating their

work. The problem of the home demonstration agent does not differ from that of the agricultural agent. She is a coördinator also. It is her business to help the housewife to determine how much time and energy can be expended wisely on household activities, and also to determine just what is best to do in each instance.

This brings me to a very frank discussion of the fact which led to the reorganization of the Office of Extension in the United States Department of Agriculture. More money has been set aside every year for home demonstration than has been used. Our problem was to find out why this was so. We found, first, that it was difficult to get the proper type of home demonstration workers and to keep them when found because so many marry. We also found that in time of financial stringency home demonstration agents were more likely to be dropped from the budget than farm agents.

It is not only proper but natural for both the man and the woman in the farm home to think of the extension agent's work in the light of farm profit. Nobody realizes more keenly than the farm housewife that the fields must pay a profit or she has no money for washing machines, running water, sewage systems, lighting systems, furniture, piano, and many other things that make home life full and complete. I feel that any organization of extension work which requires a consideration of home demonstration work separate and apart from farm or agricultural demonstration work will always react to the disadvantage of the home demonstration work.

For this reason extension work has been reorganized and in place of men's work and women's work we have a Programs Division and a Methods Division. Women have a part in all the councils and are consulted with reference to the portion of money that should be expended on that part of the work in which women are immediately interested. The United States Department of Agriculture does not attempt to control the work in the states but many of the states are following its example and adopting a unified farm home program of work instead of separate lines of work devoted to agriculture and home economics.

The Secretary of Agriculture believes that home economics work should be greatly strengthened and he authorizes me to state at this time that he has in view "making the home economics work an independent bureau ranking with the other bureaus of the department and placing at its head a woman with executive ability, thorough scientific training, and a broad and sympathetic understanding of what is needed to make the bureau of help to the women of the land."

SOME OF THE LARGER RELATIONSHIPS OF HOME ECONOMICS

ISABEL BEVIER

It is my purpose to discuss some of the larger aspects of home economics, (1) within the university, and (2) without the university.

The test of individuals and associations is the company they keep. The test of home economics is the place it has made for itself in the university life. Home economics must stand, first of all, for sound scholarship. The way must be open for students to receive academic honors. Home economics must take part in the constructive work of the university, at its senate meetings and faculty conferences; it should continue to assume the rôle, usually so gladly accorded it, in the social life of the university. The finer forms of social intercourse and the development of a gracious womanhood are a definite part of the program for which we strive.

Home economics courses should teach sane living, the richness and fullness of life, the joy of work, good citizenship. The goal of university training is leadership. The specific must be used to develop general ability; the concrete must be applied to its ultimate end, an understanding of real values.

So much for the suggestions about Home Economics inside the University. Now as to its relationships on the outside. A glance at this program shows that home economics has a recognized place in the world's work in nutrition and public health, but there are other fields of endeavor quite as important for home economics.

What has this program or the Association done for art in any or all of its varied forms? Art is a mighty instrument for the enrichment of our common life, for the beautifying of the daily task. As I see it the extension workers have done, speaking by and large, the best piece of art work because they have used the materials at hand—clothes and hats—to teach proportion, form, line, color.

Other forms of art ought to be developed by coöperation with architects in the arrangement of the house for efficiency and beauty; and with another group, the decorators, to ensure good taste in furnishing so that women may know how to express personality through this channel and so make a house their home.

Home economics must follow women into the fields, rather new to them—economics and politics.

The passing days emphasize the necessity for wise expenditure of time, money, and energy on the part of everybody. Whether women understand it or not, forces quite beyond their power are giving them a part in the economic and political life of the nation. Home economics workers need to hear and heed the command, "Enlarge the place of thy tent and let them stretch forth the curtains of thy habitations; spare not, lengthen thy cords and strengthen thy stakes."

HOME ECONOMICS IN PORTO RICO

ELSIE MAE WILLSEY

Supervisor of Home Economics

The efficiency of the school system of Porto Rico is due to the centralized organization and administration. This central educational organization comprises the Commissioner of Education, appointed by the President of the United States, an assistant commissioner, secretary, and chief of the division of supervision, and eight general superintendents. The latter are in charge of Spanish, English, high schools, rural schools, athletics, home economics, manual arts, and agriculture. Their duties are those of organization, supervision, and instruction in their particular branch of work for the whole island.

Credit for two years of home economics is required for graduation from elementary school and two additional years for graduation from high school. A fifth year is elective in eleventh and twelfth grades. The work in home economics at the University of Porto Rico is similar to that offered in universities in the States, and leads to the degree of Bachelor of Arts.

All home economics instructors in the University and University High School are graduates of universities in the States, as are also heads of the departments in some of the other high schools. Positions in the smaller high schools, continuation schools, and elementary schools are held by Porto Rican young women, graduates of the normal course of the University of Porto Rico.

The Baldorioty Technical School, San Juan, houses the beginning of a technical school for girls. It aims to specialize in three branches (1) dress-making, (2) millinery, and (3) nurse's preparatory. At the present time there is no demand for institutional cookery but this will surely be added later.

The work of the Supervisor of Home Economics includes supervision over: (1) The home economics work in all elementary, continuation, and high schools as well as the University of Porto Rico. Accredited private schools are visited once a year. (2) Vocational classes in Porto Rican drawnwork and embroidery. This year there were seventy-two teachers of home economics and fifty-five of needlework. The teachers in the vocational classes are Porto Rican women.

The housing of the departments has made great strides during the past year. Several home economics cottages have been built and several others are being planned. A five room concrete building is being constructed in Ponce for elementary home economics work. It is to be named the Ellen H. Richards School. It will be modern in every respect. In equipment the group plan of work is being advanced in all permanent building.

The penny lunch room of the States is the "Comedor Escolar" of Porto Rico. It is financed either by the municipalities or charitable associations. More and more it is coming under the supervision of the teacher of home economics.

Every municipality has its "Home Economics Club." The activities of these clubs are planned to employ the leisure hours of the girls. Each year a special project is taken up by all the clubs. In 1920-21 the project was "Simplified Dressing among School Girls." The main ideas were low heeled shoes, substantial dresses, and bobbed hair. The success of this movement pushed by the girls themselves, has been nothing short of marvelous. Practically every school in every municipality now has its school uniform and the girl appearing at school without it feels inappropriately dressed. In 1921-22 the project was "Health through Exercise." In 1922-23 the project is to be "Child Welfare."

The Home Economics Club girls are all Junior Red Cross girls also. The drive last year gave \$30,193.25 which was 100 per cent enrollment for all schools. The peace time work of this organization has been: Establishment of dental and health clinics, scholarships to deserving students, community buildings.

The Junior Red Cross gave \$7,500 for a school and library building for children at the Insular Tuberculosis Sanatorium. \$15,000 has been voted for a girls' dormitory at the school for the blind.

Scholarships include two to French war orphans, six at the University of Porto Rico, one at the University High School, one at the Polytechnic Institute, a Presbyterian college at San German, and one at Comerio continuation school.

I desire to make an appeal to members of the American Home Economics Association for Scholarships for home economics teachers of Porto Rico, to enable them to attend universities in the States either during the school year or summer sessions.

HOME ECONOMICS IN INDIA AND NEW ZEALAND

ANN GILCHRIST STRONG

University of Otago, Dunedin, New Zealand

The first work inaugurated in Baroda, India, was in the Teacher Training Colleges for men as well as for women. The course was one in "Rural Home Problems," and was given through an interpreter until I was able to train others for it. We used demonstrations and charts with illustrative material to teach them the simple facts of sanitary science and dietetics needed by the villagers. Prenakipresad Desai, the Principal of the Male Training College, is a graduate of Teachers College. A Scotch girl in charge of the Female Training College was an enthusiastic aid in establishing the work. A man who was trained by me is now in charge and is carrying on the course in the vernacular with success.

The second place to install a course in household arts was the Girls High School, under Miss Needham, the English Principal. She so arranged her program as to permit one course in each school year, and at the same time made it possible for a girl to specialize in the subject and take several courses in one year.

Here it was possible to teach in English, and I did this myself with the assistance of the girls doing practice teaching. The course of study has been printed and is now in use, being carried out by Dattatraya Ramchandra Jogleker, who teaches the science, and Miss Gulabbai Javeri, who teaches the cookery and clothing work.

They now have an annex consisting of half a dozen rooms where the practical courses are taught under good Indian conditions. The study of their foods and methods of cookery, as well as their dress, was to me most fascinating. They have much to teach the Westerner.

The most important teaching which I had in charge was the three years course in household arts given at the Baroda College to a selected group of graduate students, mostly men. The purpose of this training was vocational, and for two ends. Half of the students were to be prepared for institutional management and the other half for teaching. The practice field was unique. Specialization took place in the last year, and each student made a study of his problem and assisted me in its practical supervision. The state guest house, palaces, laundry, stores, and kitchens were under my direction and inspection. The students were trained to take this work over at the end of their college course. At present they are employed as supervisors of the bungalows, and as teachers in the training colleges and high schools.

The principal of the new Women's College in Ahmedabad is carrying out the household arts courses there.

The work in New Zealand was started ten years ago. The efforts of Mr. John Studholme are largely responsible for its installation in the University of Otago. Miss Boys-Smith and Helen Rawson from England have done good work in developing what is here called the "Home Science" courses in elementary and high schools, as well as in the University, where it is a degree subject.

Home science has had the science emphasized to the neglect of the home part of its name, and we are now attempting to balance this up. It is compulsory in the high schools for all girls, and our graduates of the University teach them. The syllabus covers inorganic and organic and applied chemistry, and in some schools the only application is that made in the chemistry laboratory.

The University Department of Home Science is now housed in a fine stone building, and is well provided with up to date laboratories and equipment. We number about seventy-five students, and forty-six are in residence at Studholme House which is run by the students in training. This makes an

excellent practice house for large housekeeping and we are now hoping for a bungalow to provide practice in a smaller group. It is surprising how well the students manage the hostel, doing the ordering, planning of meals, and the cookery. We now have six professors and seven assistants in our department.

While the training in the past has been almost entirely for teachers, the institutional management classes have been begun. In cooperation with the hospital we are hoping soon to bring a dietitian from America who will help us open up this vocation for our graduates.

The health clinics have been a great success, both from the point of view of our students' gain in experience, and the help thus furnished the public. Demonstration lectures in connection with the clinic and summer camp for undernourished children have furnished a means of contact with the community, and have created a demand for extension work.

The Christ Church Home Economics Association is in a flourishing condition, and we all hope some time to be able to affiliate with you and to become a part of the International Association. Indeed I consider our International Committee work as important as any you have undertaken in the Association.

HOME ECONOMICS IN ROUMANIA

MARY HALEY MORAN

Some work along home economics lines has been done under the direction of the Junior Red Cross. Three centers testify to the work of the Junior Red Cross in helping Roumanian children who have been orphaned or crippled in health by the war to regain a normal life. These are: the sanatorium for tubercular children at Tekir Ghiol, the Breaza social center, a scholarship fund.

Breaza lies among the hills of northern Wallachia, not far from the oil wells of Campina. The Industrial School For Girls which is located here has become a model for other schools of its kind in Roumania. The girls at the school are all orphans. First of all, it was thought to be wise to teach them some housekeeping, for having no homes of their own they lack knowledge of the science and art of household management. In addition, they have been given school lessons, and home hygiene and exercise. Above all they have been taught to weave on hand looms the fine rug for which Rumania is famous, and to embroider the ancient and beautiful patterns. In the course of time as the school is enlarged and the older girls become more skillful, it will become self-supporting. There are 29 girls at the school, between the ages of 14 and 18. They come from the humblest type of home.

There was a great lack of facilities for the housekeeping classes but the Personnel Cottage helped to solve the difficulty. A young and unusually intelligent Roumanian servant girl was trained to serve as instructor to the girls as they came one by one, staying a week at a time, to live and work in

the house. At the end of the week, the girl had been taught how to sweep, dust, clean floors, wash dishes, and had some practice in American cooking and table service. On the last day of her week, the girl cooked and served a Roumanian dish.

At Breaza the Junior Red Cross is in charge of a Baby Welfare Station, which includes a weekly clinic and home visits, serving an average of 180 babies; a pre-natal clinic occurring twice a month with home visits; a mothers' club with monthly meetings and talks by doctor and nurse.

There is a comprehensive school health program including: anti-tuberculosis clinics twice a month and home visits, serving 100 children; health instruction in schools by doctor and nurse, serving an average of 350 children; school canteens daily, serving an average of 350 children; teachers' meetings, relating to the school health program, once a month.

For Miss Winslow's report of the International Congress on Home Economics, see the JOURNAL for August, 1922.

RESOLUTIONS ADOPTED BY THE THIRD INTERNATIONAL CONGRESS ON HOME ECONOMICS

The Third International Congress on Home Economics, following the action of the Congresses at Fribourg and Ghent, presented certain resolutions at its meeting in Paris, 1922. Extracts from these resolutions are as follows:

Section I. Urban Home Economics

Home economics should be included in all primary schools on the same basis as other branches of instruction; it should be given in school hours by the regular teachers, who should have received sufficient preparation for this purpose in the normal schools; it should have a place in the program of the intermediate or secondary schools, and be recognized in the examination for graduation.

It is desirable that housekeeping courses should be established in connection with all women's community organizations.

It is desirable that present educational periodicals give a large place to home economics material, and that an international bulletin on home economics be published to keep home economics people in touch with one another in the intervals between the sessions of the Congress.

Section II. Agricultural Home Economics

Agricultural home economics, because of the knowledge which it provides concerning essentials in family life, should be embodied in the program of all rural schools, whether elementary, secondary, or intermediate. The information should be definite and accompanied by practical work.

All types of post graduate schools in agricultural home economics are to be recommended; however, when possible, preference should be given to permanent schools providing continuous instruction aimed at general agricultural improvement.

It is desirable that farmer's wives be organized as far as possible into groups, which, by conferences and by other means of popularization and competition, will assist in the improvement of education and in the professional progress of agricultural home economics.

Section III. Home Economics and Social Life

Home Economics, including child care, should form the basis of professional courses for all young women who are preparing for business or industry whether or not technical education is required. It is to be wished that each business or industrial establishment employing a certain number of young girls would organize for them a household school and make their attendance possible.

Domestic service should be considered a profession and a thorough apprenticeship should be required.

The scientific basis upon which home economics rests, should be considered an essential element in home economics instruction, and should be taken account of in the examinations of all grades. It is desirable that the university and the laboratories for advanced instruction should come to the assistance of home economics.

It is desirable that there should be added to the course in hygiene and child care, in all the household schools, certain simple information about educational methods in the home, suitable for the preparation of the future mother of the family for her duties as an educator.

International Federation

The Congress recommends to governments, public authorities, various scientific and professional organizations, and private individuals, membership in the International Federation for the development of home economics. This Federation, through the office which it maintains, can assure the continuation of the International Congress and provide at all times, by its records, its bulletin, its library, its inquiries, and its studies, that various countries may profit by the experiences in other countries.

The Congress also recommends that governments and private individuals send to the International office text books, charts, and all printed material used in home economics instruction; that the office be assisted by a technical commission who will give suggestions for the improvement of such material and make the best material better known and more widely circulated.

The Congress authorized the International Office to undertake the necessary steps for carrying out these resolutions as rapidly as possible.

FOOD AND NUTRITION SECTION
COÖPERATIVE CHILD NUTRITION SERVICE

MARTHA KOEHNE

Department of Home Economics, University of Washington

Nutrition classes or clinics are springing up every where and the demand for educational work along health lines is increasing. That the public is finally awake to the importance of diet in the prevention of physical defects and inefficiency is a cause for rejoicing. Progressive pediatricians and physicians interested in preventive medicine fully recognize the importance of the proper feeding of infants, children, and adults. Public health work of the future is bound to give more and more recognition to the need for scientifically trained leaders in nutrition. Public health nurses, who come in close contact with intimate family problems and community needs, were, at their recent convention in Seattle, united in expressing their desire for adequately trained leaders in nutrition work. At the University of Washington the aim is to provide, for those students who desire it, actual experience in methods of detection and control of malnutrition, to enable them to learn all they can from local pediatricians, and, incidentally, to cultivate a spirit of closer cooperation between the department and the practicing physicians. The University also seeks to be of immediate service to the community in which it is located. The Home Economics Department felt keenly, however, that the general plan to be adopted, with the above object in view, must have the coöperation and moral support of other agencies already at work in Seattle for the betterment of child health. After consultation with all persons interested, the cooperative Child Nutrition Service was inaugurated about the middle of February, 1922, in the Nutrition Laboratory, Home Economics Hall.

Before discussing this service, a few words are necessary in regard to general work in dietetics and nutrition at the University. The University supports a strong nursing department. In addition to the regular course in dietetics and nutrition for home economics majors with excellent laboratory equipment for nutrition work and supporting science courses, a special course is offered to these nurses and to sociology majors. After having had either of the above courses students may elect an advanced course—Problems Connected with Malnutrition. This course includes, on the theoretical side, an intensive study and discussion of infant feeding and the feeding of older children, many topics relating to malnutrition, the work of various organizations in the country that are especially interested in child welfare work, and the dietary customs of various nationalities.

On the practical side, the work centers around the coöperative Child Nutrition Service, which is directed by the writer in coöperation with Dr. V. W. Spickard and Dr. George J. Mohr, both pediatricians. The Service is open every Wednesday from 2:00 to 5:00, the only charge being 15 cents. Mothers may bring any growing child where the difficulty is one of nutrition, or if she wishes to be sure the child is developing normally.

The physicians give a medical examination and recommend procedure. They coöperate with the Department in recommendations as to dietetic treatment. Great emphasis is placed upon the importance of breast feeding up to nine months. Diet sheets for infants under one year, for children from one year to eighteen months, and from eighteen months to three years of age, have been prepared for issuance to mothers, to expedite the work. In this way, only special suggestions are necessary, and much repetition of general instructions is eliminated.

Students taking this course are present at these consultations. They take the history of the case, its dietary habits, and its habits of hygiene. They weigh and measure the children and have each information chart complete by the time the physician is ready to make the examination. They also record the results of the medical examination and all the directions and recommendations made.

These students are getting valuable experience in working with physicians and parents, and in visiting homes, thus removing the handicaps ordinarily hindering inexperienced nutrition workers. They are also required to visit orphanages, children's homes, and children's hospitals in and around Seattle, as well as the health centers and nutrition clinics operated by the Health Department, Anti-tuberculosis League, and public schools.

So far we have examined 85 children: 34 under one year, 16 from one to two years, 14 from two to four years, 10 from four to six years, 9 from six to ten years, and 2 over ten years of age. We have had 45 return visits and 17 phone communications with others.

PLANS FOR TEACHING PRACTICAL NUTRITION TO THE PUBLIC

MARGERY M. SMITH

Assistant in Nutrition, Oregon Agricultural College

The public is not a young child ready to accept without question present day teachings looking toward higher health standards. The public is rather an adult capable of thinking and susceptible to advice and suggestion. The state of nutrition of the public will be improved not by force but by creating a desire to be better fed through simple, clear, and unmistakably presented evidence of the relation between food habits and health.

The public may be expected to learn (1) by reading, (2) by hearing, (3) by seeing, (4) by doing. The agencies that may be employed in teaching the

public are the written word, the spoken word, the picture, the exhibit, and the demonstration of the desired practices. The written word has greatest possibilities in reaching large numbers and, rightly used, is a powerful agency. The full use of the simple, clear, accurate written word in teaching nutrition is not yet fully realized. The spoken word with its personal contact is more influential in overcoming food prejudices and superstitions than is the written word, and may reach some who have not read. Since so large a proportion of our adult public, however, is eye-minded and learns rather by seeing and doing than by reading and hearing, visual methods of teaching practical nutrition should be further employed. For instance, a demonstration of vegetable salads and whole wheat bread sandwiches gives an opportunity to see and taste as well as to discuss foods of high value in the diet from the standpoints of minerals and bulk.

It is of utmost importance for those who would teach practical nutrition to be themselves living examples of the practices they would teach. The power of example cannot be over appreciated. Any person well trained in nutrition, whether in professional work or not, should assume the rôle of a teacher. Accumulated knowledge in nutrition is of little value until it is made to function in the lives of the individuals who make up our public. The avenues of the written word, the spoken word, and the visual method are open. Through them we cannot have too many teachers of sound nutrition gospel.

NUTRITION: ITS APPLICATION TO COMMERCIAL AND INDUSTRIAL PROBLEMS

GUDRUN CARLSON

A few nutrition workers have been actively engaged for the past few years in fields closely related to industry, but most of the home economics profession either has not been informed concerning it or has given the fact only a superficial thought. If specialists who go from the home economics profession into the commercial or industrial field are to be accepted and retain all their prestige, they must do work which is creditable and based on scientific fact.

The variety of applications which nutrition, in particular, may have to the commercial and industrial fields is rather hard to define or classify, but I shall attempt to give you a general idea of some of those now being carried out.

1. The research field in nutrition is making some excellent contributions to industry. Realizing the importance of research, the Carnegie Corporation has helped to establish a Food Research Institute at Stanford University, "for the purpose of intensive study of the problems of the production, distribution, and consumption of foods." So far as I know, their plans along lines of foods and nutrition are not definitely formulated, but we can use our influence to get some very useful work done there.

Several large food concerns have conducted and are conducting research on their own products which should be a constant impetus to produce better food. You may be familiar with some of the work done with flour, yeast, bread, oils and fats, milk and milk products, meat, and other foods.

2. Of equal, if not greater, importance is the educational phase, and it is into this field that most of our nutrition workers will probably go, for the present, at least. Naturally, much of this work is allied with advertising and publicity, but again it may be said that it can be truly educational, if done by a woman trained in home economics.

3. Journalism is another field which in several ways might also be called educational. Nutrition terms are bywords to the reading public, and the best standard magazines are beginning to appreciate the fact that their foods and cookery articles must either be written or edited by persons well trained in nutrition. Even trade and commercial publications are taking steps to fall in line with better and newer knowledge of nutrition.

4. The field of nutrition which may appeal most to the academic person or teacher is that of employee health service in commercial and industrial plants. The malnourished child has at last received attention, and we are just beginning to turn to a more systematic study of how to help the malnourished adult. Physicians and nurses have done some work but there is much need of specialists in nutrition.

The opportunities in the closely related fields of chemistry, bacteriology, and physiology, should interest us also, particularly where food is concerned.

It will be of special interest to teachers of nutrition to keep in touch with the new course in this subject which is to be developed at Cincinnati University in the professional school for women. The course will probably be five years long.

CONTENT OF THE FIRST YEAR COLLEGE COURSE IN FOOD FOLLOWING THE TWO YEAR COURSE IN HIGH SCHOOL

MARGARET FEDDE

University of Nebraska

The content of the first year college course in foods must depend upon the high school training the students have had in home economics. The colleges must take cognizance of this work in order to avoid expenditure of the students' time and energy in repetition. Inquiry made of state supervisors of home economics resulted in 16 replies. Of these, 11 advocated separate courses in foods for pupils from vocational high schools; 2 disapproved of separate courses on the ground that the work in the high schools was decidedly elementary; 3 were uncertain.

Inquiry made of colleges regarding changes in food courses for students with high school work in home economics resulted in 16 replies. California,

Washington, Oregon, Montana, North Dakota, Kansas, Nebraska, and Minnesota offer separate courses to the students who come with high school training, or exempt these students from the first course in foods, or exempt them from laboratory in food work but require that they take the lecture work. Our experience at Nebraska in offering a separate course in food study has not been entirely satisfactory. Ohio, Arkansas, Michigan, and Delaware place students in separate classes in clothing but not in food study. Some of the colleges base their course of study on the assumption that the majority of students have had high school foods, and therefore require an extra term of work of the girls who have had no high school work in this subject.

In view of these different procedures certain fundamentals must be established in order to offer to the students the work which will best serve their needs. 1. The college course should be based on a two year course in high school when 50 per cent or more of the students have had this training. Not more than two years work in home economics should be offered in high school. A longer course narrows the curriculum. 2. Standards of accomplishment must be set in the high school. 3. Colleges must know what is being taught in high school in order that they may build their work on what the students already know. 4. Some scheme of evaluating the work done in the high school must be devised. 5. Very definite aims and standards of accomplishment must be set up for the college course. 6. The college course should be based on what the girl knows and what she needs to know to fit her for the responsibilities of homemaking, teaching, institutional, commercial, social, or research work. This includes a thorough knowledge of foods from the standpoints of preparation, purchase, costs and relation to budget, legal safeguards, place in diet for all ages, and relation to health.

THE CONTENT OF HEALTH COURSES IN THE COLLEGES

ELISABETH AMERY

University of Washington, Seattle

A lecture course on food is a university requirement at the University of Washington. Six years ago, at the request of the physical education department, a change was made in the physical education requirements for women, resulting in the division of the course into three parts: floor work, hygiene lectures, and food lectures. Two hours of floor work and one lecture in hygiene per week are required of the first year students, and two hours of floor and one lecture in foods per week are required of all sophomore girls, with the exception of those who complete the regular courses in food and nutrition in the home economics department. A member of the home economics staff gives the food lectures. The following topics indicate the work covered:

1. An appreciation of the importance of food including a study of the sources of our food and food laws.

2. A study of diet for normal adults.
3. A study of diet for infants and children of all ages, and diets for some abnormal conditions of adults.

The students are greatly interested in the work and make application of the knowledge gained in attempting to better their own health through diet, in bettering the kind of meals served in boarding houses and sorority houses, and in improving the diets of members of their own families.

Many members of these classes are engaged girls for whom feeding problems are real and immediate ones, and such a course offers almost the only opportunity to gain knowledge concerning them.

There is a great need for this work, and a large opportunity is offered, through the medium of a required course, for college women to become more intelligent caretakers of themselves and others in the matter of health through the selection of food.

HOME ECONOMICS FOR BOYS

MARY RUTH FISHER

Supervisor of Home Economics, Twin Falls, Idaho

Home economics for boys! Immediately there comes to the minds of the persons not familiar with the content of home economics the picture of a "Mama's darling" with an embroidery hoop; but the course as offered, composed of six units given in the order I shall use in this brief discussion, was taken up from the standpoint of a real boy.

All boys eat, in fact most of them live to eat; so we used this as a starting point for our first unit, foods. We discussed what to eat, both normally and before and after a game. We learned digestion, food values, and body needs.

During our second unit, clothing, we studied pure and adulterated fabrics, cleaning, pressing, simple mending and other things men should know to make them intelligent buyers.

Budgets, savings, investments struck a most responsive chord. We kept itemized expense accounts and made out budgets; we studied intelligent banking, safe investments, life insurance, and other money problems.

Care of sick, first aid, and general health helps made up the next unit. We learned to administer artificial respiration, to do simple bandaging, and to take personal daily exercise.

The "joy unit" proved to be "Duties of a Host." Our discussions were extremely frank, dealing with all phases of actions, etiquette, and manners.

In camp cookery, the last unit, we studied cooking from the standpoint of a man out of doors. Only those foods interesting to men and done in a man's way were considered.

Home economics for boys interesting? Decidedly. And the boys declare it the most beneficial course they have ever taken.

TEXTILE SECTION

HOME PROJECTS IN THE SEVENTH AND EIGHTH GRADES

ANNE C. PLATT

Seattle Schools

In order that we may understand the fundamentals of a home project let us look briefly into its requirements. A home project must not only meet the need of girls; it must meet the need of the individual girl. In other words, it must be a "purposeful activity" on the part of the girl. It must offer experience in homemaking activities in as nearly normal conditions as possible, while developing both her managerial and manipulative powers. This must all be done, not alone by the girl under the guidance of the teacher, but with the close coöperation of the mother, who is the true manager of the home.

There are a number of home projects in textiles that are valuable both to the girl and to her home. Among them are renovating and remodeling of clothes for herself or other member of the family; planning wardrobe for herself or other member of the family for one year; washing her own dresses or children's play clothing or underclothing; laundering curtains, care of linen closet; removing stains, care of family linen; family mending; care of baby brother's or sister's clothing; selection and making of drapes or curtains for her own room; making more attractive some other room in the home.

In all home project work we must remember, as teachers, that we are not "teaching" these girls, in the commonly accepted meaning of the word, but rather working *with* them on *their* problems.

RESEARCH METHODS IN TEXTILES

RUTH O'BRIEN

Chemistry Department, Iowa State College

Choice of the Problem. The choice of a problem is, after all, the first, and often one of the most difficult, tasks. It is so difficult that your research committee has been besieged by requests for lists of suitable problems. I have little sympathy with such requests or attempts to comply with them. The student, the amateur, comes to an instructor for a problem. That is her privilege. If that instructor does not know the field well enough to select a fruitful problem, I doubt if she has the ability to direct its study intelligently. And why expect or demand that every instructor direct research? It is, after all, congenial and profitable only when she has at least three qualifications. First, she must have previous training in the general methods of research and experience in studying a problem herself.

Second, she must be well read and must have the time or, more important still, the inclination to keep herself up to date in her field.

Third, there is perhaps such a thing as a research type of mind and it might be well to inquire whether your textile investigator possesses such. However, personally, I believe such an endowment to be a sane, straight-thinking brain plus the willingness to work.

What are the standards for the problem chosen? (1) It must be one which has not been satisfactorily solved before. (2) It must be compatible with the particular training of the director. (3) It must be compatible with the previous training of the student. (4) It must be compatible with the resources of the laboratory. (5) It must be such that results can be reasonably expected in the time allotted for the work. This is particularly true when a student's degree is involved. (6) It should not encroach upon the field of another investigator or duplicate work already under way.

The study of the problem. There is very little which can be said concerning the actual study of research problems, as they differ too widely in nature. Perhaps it can all be summarized by saying that we must be sure that our thought, our instruments, our raw materials, our conditions (those we hold constant and those we vary) are calibrated. We must know their value, their properties, to a degree equivalent to the scientific accuracy of a calibrated instrument. Clear, hard thinking on every phase of the development is demanded; and good courage, always. It is also important to know when to remove a student from a problem and place her upon another.

Results. Results should be recorded in as comprehensible a manner as possible, stated clearly and concisely, and published in our Journal of Home Economics. We all regret the limitations which must be placed upon the length of the articles accepted by the Journal but that is only another incentive to get results reported in concise form.

TESTING MERCHANDISE

ROSE FRASER

Fellow in Textiles, University of Washington

The Home Economics Department of the University of Washington received an annual fellowship of \$600 for a graduate student who gives a part of her time to the store, testing merchandise. It is known as the Bon Marché Industrial Fellowship in Textile Research. Frances Grant Heverlo, a former home economics teacher, has developed a unique personal service department in the store, and it was largely through her efforts that the fellowship was made possible. This intimate connection between the textiles laboratory and one business house is the outgrowth of years of coöperation with many stores. Miss Denny, assistant professor of home economics, has tested goods when requests came, and conducted evening classes for store people.

We have not only had to work out methods of testing but we have had to sell the idea to the more conservative people in the store. The policy has

been to make controlled tests on materials as requested by merchandise heads. For the most part tests have been confined to composition both by the chemical and microscopic methods, with work also on fading in sunlight, washing, wrinkling, shrinkage, and wear as shown by the abrasion apparatus.

BUSINESS MEETINGS

Business meetings of the Textile Section were held August 3 and 4, Grace Denny, Acting Chairman, presiding in the absence of Agnes Houston Craig, Chairman.

The minutes of the last meeting were read and approved and the following committees appointed: Nominating—Helen Lee Davis, Chairman; Aims and Program for 1922-23—Ruth O'Brien, Chairman.

The treasurer's report was presented by Ethelwyn Dodson as follows:

Dues received.....	\$205.00
Bills for correspondence.....	12.00
	<hr/>
Total on hand.....	\$193.00

Report of the Chairman, Agnes Houston Craig, read by Miss Denny.

The Chairman of the Section wishes to report items toward progress and to submit for your study and consideration certain recommendations.

1. Appreciating the previous work so well begun by a small group of textile specialists, it seemed wise to strengthen the opportunities for its continuation. For this reason the Textile Section was organized on an independent financial basis at the Swampscott meeting in July, 1921.

2. The membership goal of 500 was considered high. It was adopted, however, as a spur. Miss Dodson's last report shows 200. In addition to the work of the membership committee, the Chairman has sent out over 500 letters on membership and has presented the cause to over twenty organizations. In the *JOURNAL*, February, 1922, page 85, there appeared a letter from the Chairman in which she asked that textile people send in their names and subscriptions without waiting for a special invitation. Money we spend on postage cannot be used for research. The Chairman emphasizes this suggestion.

3. Miss Birdseye has been untiring in her work and counsel to the end that we might gain further cooperation from such agencies as the National Research Council, the Smithsonian Institute, the National Association of Cotton Manufacturers. We have corresponded and consulted with such leaders as Mr. Howe, and Mr. Corse, of the National Research Council; Mr. Lewton, in charge of Textile Exhibits, Smithsonian Institute; Mr. Fisher and Mr. Walen, National Association of Cotton Manufacturers.

4. On request from Mr. Howe, the Chairman named six persons, subject to call from the National Research Council, to assist in formulating policies for finance and work that would make Textile Research for the consumer a permanent fact in the program of the National Research Council. The persons named were Miss Trilling, Mrs. Wooman, Mrs. McGowan, Miss O'Brien, Miss Birdseye, Miss Crooks, Miss Craig.

5. The Chairman is informed that her own experience is true, namely, that too few textile specialists send in contributions to the *JOURNAL* or to other magazines. Some articles are being prepared, but more are desirable. Too little has been accomplished here, up to date.

6. Miss Birdseye and the Chairman worked out a tentative draft of a program for next year. This draft was sent out to over twenty people for criticism, and constructive suggestions. Our recommendations have been referred to the committee considering the program for 1922-23.

Report accepted.

Report of *Present Status of Research in Standardization*, Miriam Birdseye, Chairman, read by Miss Denny.

Report of *Committee on Aims and Program for 1922-23* presented by Ruth O'Brien, chairman.

The following aims for the Textile Section of the American Home Economics Association are submitted for your approval:

1. To stimulate interest on the part of special teachers of textiles and clothing, and to improve educational standards in this field.

2. To organize and work toward better policies in production, manufacture, retailing and consumption.

3. To establish a fellowship for investigation in the interest of this section, as soon as funds permit.

The following recommendations are submitted:

1. That the work of the Textile Section for the coming year be concentrated in the following committees:

- a. Membership Committee to select a representative for each state from the list secured at this meeting and conduct an intensive campaign for membership of this section, and encourage subscription to the JOURNAL.

- b. Committee on Standardization.

- c. Committee on Research. Both of these committees to continue work as already organized.

- d. Committee on Commercial Relations to inquire into methods used to establish relations between commercial firms and the teacher, and offer plans to help the teacher establish such relations.

- e. Committee on Educational Essentials in this field to evaluate the subject matter which should be presented, either within or without our schools.

2. That the secretary of the section send to all section members, a statement of the financial plans of the section.

3. That the section support the research program of the Standardization Committee to the extent of 75 per cent of the funds available this year.

4. That Mr. Wm. M. Corse, of the National Research Council, and Mr. F. R. McGowan, head of the Textile Section of the Bureau of Standards, be elected honorary members of the Textile Section.

Report accepted.

Report of *Nominating Committee* read and accepted. Officers for 1922-23: Chairman, Ruth O'Brien, Iowa State College, Ames; Vice-chairman, Ethel Webb, Carnegie Institute, Pittsburgh, Pa.; Secretary, Rose Shonka, Supervisor of Home Economics, Lincoln, Nebraska; Treasurer, Beulah Blackmore, Cornell University, Ithaca, New York.

Committee chairmen were appointed as follows: Membership, Mabel McBane; Standardization, Doris Schumaker; Commercial Relations, Marian Weller.

INSTITUTION ECONOMICS SECTION

THE TRAINING OF HOSPITAL DIETITIANS

LENNA F. COOPER

School of Home Economics, Battle Creek

Before attempting to outline a program^m of training for any specific job, it would seem appropriate to analyze it. The dietitian's job as it is and as it should be, may be quite different propositions. As it is now and as it was fifteen years ago are also different propositions. It would be sad indeed if there were no goals ahead.

As the position is defined by hospital superintendents today, it consists of two types: (1) diet kitchen supervision; (2) food department supervision. In the first type of supervision, the following are the duties as usually outlined: 1. The planning and supervision of all special and weighed diets and nourishments. 2. Catering to private patients, if such there are. 3. Ordering supplies from steward or storeroom. 4. Supervision of the serving of all food prepared in the diet kitchen. 5. Supervision of the cleaning in diet kitchen. 6. Teaching of dietetics, foods, and cookery to nurses. Such a dietitian is usually responsible to the superintendent of nurses and is ranked as a member of the faculty of the nurses training school.

The second type of position is one of larger responsibility. The duties include not only those of type 1, but the following in addition: 1. Planning menus for the entire household, including the regular or house diet for patients, menus for staff, nurses, and domestic help. 2. Supervision of kitchens, dining rooms and serving rooms, also pantries and refrigerators. 3. Buying of food (this she may or may not do). 4. Checking up the bills of the department. 5. Hiring the help of the department. This dietitian is usually recognized as head of her department, being directly responsible to the superintendent of the hospital.

In the first type of position the dietitian is concerned chiefly with the special diet work, while the administrative phase of the work is not especially emphasized. In the second type of work, the administrative duties predominate, though this type of worker must also give careful attention to the special diets, unless she is fortunate enough to have an assistant who may relieve her of this detail. In both positions the dietitian is an instructor, a member of the training school faculty.

The first type is not an ideal position for a competent dietitian except in very large hospitals, but it is a stepping stone for the inexperienced dietitian, who may the more easily and successfully acquire the technique of her profession by becoming familiar with the duties before undertaking the larger responsibilities. The second type is becoming more and more the recognized status of the dietitian.

The training of the dietitian consists of two types: (1) class room instruction; (2) hospital apprenticeship, neither of which is complete without the other. As a group we are particularly concerned with the class room instruction.

As courses of study are now arranged, they are usually two or four years in length. The two year course should be considered as strictly vocational in character. In any course for dietitians, the sciences must be made the foundation, particularly chemistry, bacteriology, and physiology.

Sufficient time must be given to the foods courses to acquire skill in preparation. Ten to twelve semester hours is none too long to spend in this subject, this to include quantity cookery. We believe also that the instruction should be of very definite character, intended to develop a good technique rather than to be merely illustrative of principles involved.

The courses in nutrition and diet in disease cannot be too thorough. These courses should be made practical and, where possible, students should observe and assist with nutrition classes or clinics held in public schools and in connection with city clinics. We have found it of value to preface our course in diet in disease by a series of lectures on diseases, including the pathology, symptoms, prognosis, and general lines of treatment, this course being given by a physician. This not only lays a good foundation for the study of special diets following, but acquaints the dietitian with medical terms and ideas.

The institution administration courses are essential. As a part of these courses there should be one in organization, in which types of institutions should be studied, together with their relation to their communities; the relation of management and the personnel; the relation of the dietitian to the institution, including her specific duties, what is meant by line of authority, labor turnover, how to manage help, etc. Following this there should be courses in architecture of institutions, institutional housekeeping and laundry, institutional equipment, large quantity cookery (mentioned under foods), and simple accounting.

Psychology, economics, and physics have their place in a dietitian's training, though time will not permit of exhaustive courses.

The next step in the training of the dietitian should be accomplished in a hospital under the supervision of a thoroughly trained and experienced dietitian. The hospital should be sufficiently large to present the various phases of dietary work. The objects sought for in this pupil dietitian course are: 1. To give opportunity to put into practice the class room instruction, repeating a sufficient number of times to "make perfect." 2. To develop skill in doing and in managing. 3. To become familiar with hospital organization and methods.

The following pupil course, given in a large hospital, covers the field of training very well, and is here presented as a typical well planned course:

I. Practical Work.

A. Special diet kitchen. Time, six weeks.

1. Training in nourishment and special order work.
2. Preparation of weighed diets.
3. Supervision study.
 - a. Calculation of diets for diabetes, nephritis, hyperthyroidism and excess metabolism.
 - b. Ordering and checking of supplies.
 - c. Management of employees.
 - d. Professional visits to the patients on weighed diets.

B. Floor service. Time, two weeks.

1. Diet pantry service in the six medical wards.

C. Children's Hospital. Time, two weeks.

1. Preparation of infant formulas.
2. Study of the relation of the feeding to the case.

D. Nurses' Home. Time, two weeks.

1. Institutional problem in kitchen, dining room, and bake shop management.
2. Buying, filing, and inventory study.
 - a. Buying, trips with the dietitian in charge.

E. Social Service. Time, one month.

1. Casework in maternity, children's, orthopedics, and heart cases under a trained worker.

II. Theoretical Work.

A. Class work.

1. Weekly round table discussions on hospital problems.
2. Assigned weekly readings in the recent magazines.
3. Observations in the teaching of student nurses.
 - a. Planning of teaching outlines.
 - b. Teaching under supervision whenever possible.

B. Field work.

1. Weekly trips to places of special interest.
2. Weekly medical clinics.
3. Some nurses' classes by special arrangement.

Not every hospital can offer all that is given above, but all should offer experience in the management of both the diet kitchen and a large kitchen where an institutional problem is involved.

As one of the objects of the pupil course is to become familiar with hospital organization and methods, she should be permitted as far as possible to meet the various groups, heads of departments, and executives. If practicable she should live in the nurses' home.

THE TEACHING OF INSTITUTION MANAGEMENT AND THE CURRICULUM FOR PROPER INSTRUCTION

RUTH LUSBY

University of Washington

I. Teaching of Institution Management

A. Aims

1. Development of professional points of view: sympathetic interests, understanding of problems, social minded vision, appreciation of limitations of knowledge and experience.
2. Experience: gives skill, self-confidence, assurance, knowledge of specific types of management.
3. Technical Training: gives specific knowledge and specific skill but no amount is adequate without professional experience.

B. How to attain standards set

1. Survey of opportunities: hospital dietitians, state dietitians, school lunch room managers, manager of college cafe and dining halls, commercial positions in tea rooms, cafes, restaurants, hotels, teaching of institutional management.
2. Selection of group: important to select the persons showing characteristics desired, keep size of group commensurate with opportunities in field and with facilities for training. Ideal situation is training in schools with opportunity for observation and experience.

II. Curriculum of essentials

1. Instructor with sound training, wide experience, and actively engaged in managerial work.
2. Four year course with strong supporting courses in economics, sociology, business administration.
3. Practice field giving opportunity for definite responsibility and widely varied experience. Field to be supervised by department.
4. A definite period of internship in some institution under supervision of trained dietitian, work of student to be planned to avoid exploitation; report to be made by student and by dietitian.

To meet the requirements that I have stated we are offering at the University of Washington five courses in institutional management: large quantity cookery, buying and dietaries, practice work I, practice work II, and institutional management—a summary course in organization and administration.

Summary

1. Responsibility of every home economics woman interested in the institutional field to do her utmost by suggestion or active work to extend

the field, to develop opportunities for employment of trained women in food and housekeeping supervision.

2. To utilize in our educational institutions giving training in institutional administration every facility at our command to develop students who retain and raise the standards we set for institutional management.

DORMITORY DINING HALL MANAGEMENT AND INSTITUTIONAL TEACHING

ALICE H. MUSTARD

State College of Washington, Pullman

The dormitory management at the State College of Washington is directed by three heads: Social, Dean of women and matrons; Housekeeping, Superintendent of buildings; Dining Halls, Department of Institutional Management in the College of Home Economics.

We have five dormitories of which three are for women, and two for men. Two of these dormitories for women have dining halls in which we serve 120 and 200 women, respectively. One of the dormitories for men has a dining room in which we serve about 550.

We have a head dietitian and two assistants, each one taking the responsibility of managing a dining hall. The head dietitian has general supervision over all the dining halls, she does the main buying, and the miscellaneous local buying is handled by each dietitian for her own hall.

All finances are handled through the college accountant. At the end of each four weeks the expenses of food, laundry, overhead, salaries, etc., in connection with the dining hall, are divided, and each student pays for the actual cost of the food plus service.

After the students have completed all the prerequisites to institutional management, they take a course in quantity cookery which meets three times a week, three hours each time. They prepare and serve all the food sold in a cafeteria for eight weeks, then that sold in a tea room for six weeks; the remainder of the semester is used for special institutional catering.

This course is followed by the institutional management courses both semesters of the senior year. The lectures include institutional menu making, marketing, institutional organization and administration, and institutional equipment and buying. Time is allowed for advanced study for those preparing for positions as hospital dietitians, cafeteria, lunchroom, tea room, dormitory, or other institutional managers.

One part of the laboratory is so arranged that the girls have the responsibility of acting each as manager, assistant manager, cashier, and manager without an assistant, by managing the junior girls in the quantity cookery class. All of this work is done under close supervision.

The other part of the laboratory work is done in the dormitories, each of which has a different equipment and arrangement. The girls do the actual preparation of food at the beginning of the semester. Later they are given the responsibility of planning menus, taking inventories, keeping accounts, and ordering.

A NEW PHASE OF INSTITUTIONAL MANAGEMENT

M. MAXWELL

Montana presents a new phase of the institutional management field—that of the high school dormitory. There are about twenty-four, most of them being located at county high schools, where the students have to come great distances. The price charged for board and room is nominal, just covering costs.

Thirty students is the average number accommodated per dormitory but there are a few places which have as many as a hundred.

The work of caring for these students and supervising their social and health habits is a great improvement on the old plan of allowing the country students to board and room anywhere. Great credit is due the superintendents of these schools and their managers, and the home economics and institutional workers consider it a great privilege when they are able to assist them.

BUSINESS MEETINGS

Business meetings of the Institution Economics Section were held August 3 and 5, Effie Raitt, Chairman, presiding.

The report of the minutes of the last meeting were read and approved.

A vote of thanks was given to Miss Bozarth of the University of Montana for her excellent work in arranging the programs for the section meetings.

The report of the nominating committee, nominating Sibylla Hadwen as chairman and Emma Knight as secretary, was accepted and the election unanimous.

The report of the nominating committee as to program of work for the year was read as follows:

The Nominating Committee makes the following recommendations.

A. That the work of the Institution Economics Section of the American Home Economics Association concern itself with the following matters which its members feel to be of the utmost importance, both to the best interests of the section and to the whole home economics movement.

1. Registration of persons interested in institution administration—Nola Treat.
2. Communication between members—Miss Knight.
3. Stimulation of inter-relations with other organizations with similar interests such as the Y.W.C.A., the National Restaurant Associations, the Hotel Association—Miss McAuley.

4. Relation with the Journal of Home Economics—Katharine Fisher.
5. Definition of standards of the profession—Lenna Cooper.
6. Research—Margaret Proctor.

B. As a possible means of developing the program of work, the committee makes these recommendations:

1. That there be a Registration Committee appointed to obtain a list of home economics women interested in institution administration, such a list to be filed in the existing card index system of the section. It is further recommended that this list be mimeographed and available for distribution to those interested, on request. That this Registration Committee be further empowered to instigate and stimulate communication throughout the membership of the section. That the membership of the Registration Committee be regional, including Canada.

2. That a committee on inter-relations be appointed whose function it shall be to discover opportunities and requirements in the field of institution administration and that this information be communicated to the secretary of the section, who may keep it on file for the information of the members. That this committee further cordial relations, as far as it deems this advisable, with other business and professional organizations. That members of the inter-relations committee be supplied with stationery of the American Home Economics Association, inscribed with the sub-heading "Institution Economics Section."

3. It is urged that the Institution Economics Section function through the Journal of Home Economics through short, original articles concerning various phases of institution administration.

4. It is recommended that a member of the Institution Economics Section be appointed on the Research Committee of the Association. And it is respectfully suggested that, due to her varied experience and fine work, Margaret Proctor of the Y. W. C. A. be the person appointed as our member on this committee.

5. It is recommended that a committee on standards be appointed to consider some of the questions of standards of terminology. It is suggested that, among the questions considered, the following receive attention: nomenclature, standards of training in institution administration, uniforms. For example: the adoption of the term "dietitian interne" to describe home economics graduates taking training courses in hospitals under the supervision of a graduate recognized dietitian; the definition and adoption of certain descriptive terms for types of work in institution administration, such as house director, administrative dietitian, medical dietitian, matron, housekeeper, manager, director, assistant manager. That standards of training be studied on the basis of existing reports and recommendations of the Association.

6. The committee makes the suggestion that in the future the chairman of the Institution Economics Section be appointed for a second year in order that an opportunity be given for progressive work.

Report accepted.

HOME ECONOMICS EXTENSION SECTION

A REPORT ON RURAL LIFE SURVEY

BESS M. ROWE

Field Editor, The Farmer's Wife

The letter contest carried on by *The Farmer's Wife* on the question, "If you had a daughter of marriageable age, would you want her to marry a farmer and make her future life on the farm," was planned to give the farm woman a chance to express herself nationally about her own job. We felt that the things that have been written about her do not at all express her own attitude as we have observed it.

By March first we had received letters and articles from more than 7,000 farm women, representing every state in the Union, and Canada, Alaska, and Porto Rico. They also represented every economic layer and every type of farm home. Of these 7,000 farm women, 94 per cent are unreservedly in favor of farm life for their daughters. They feel that if rural schools and rural churches are not as they should be, it is the "job" of the rural woman to make them so. They also realize their responsibility in training their daughters to be efficient farm wives and mothers, to appreciate the privileges and overcome the obstacles of farm life for the woman on the farm.

The results of this contest may be summed up in one sentence: Rural women feel that their daughters will find the best chance for self-development, the best chance for self expression, the best chance for service, and therefore the best chance for happiness, on the farm.

ARE HOME DEMONSTRATION PROGRAMS OF WORK EDUCATIONALLY SOUND, ECONOMICALLY IMPORTANT, SOCIOLOGICALLY CONSTRUCTIVE?

C. W. PUGSLEY

Assistant Secretary of Agriculture

If our programs of work are educationally sound, then it must necessarily follow that they are economically important and sociologically constructive. To be educationally sound we must be teachers in the truest sense of the word. We must be using the right principles, the right words, the right charts, bulletins, and methods of contact. In bringing about a full and complete appreciation of rural life, we must not forget that instruction is more likely to find lodgment in the minds of young than of old, that the easiest approach to adults is through the boys and girls; hence the importance of boys' and girls' club work. Agriculturally speaking, if a large proportion of extension funds could

be expended for the next ten years in the development of boys' and girls' club work, it would mean the best expenditure of time and money.

Our programs are economically important if they add to the income of the farmer, if they make this income go further, and if they contribute to the economic independence of the farmer so that he can appreciate rural life in its possibilities.

Our programs are sociologically constructive if they contribute to the contentment and joy of farm women, if they are the means of getting people together so that they may enjoy community life. To this end, the motion pictures, the local meeting, the township meetings, or the county meetings should all lead the people to desire improvement of the mind and a better education of the right type.

The agriculture of the nation may be likened to a tripod, with three supporting legs—economic agricultural production, economic distribution of agricultural products, economic expenditure of the profits of these two transactions.

If any one of the three legs is not functioning, the nation suffers. Farm women are economic producers as well as the men. The expenditure of profits from the farm should make farm life more attractive. A unified extension program worked out by men and women on the farm getting together in a united meeting and agreeing to every point of the program should result in the creation of an atmosphere which will tend to make rural life more attractive and to lessen the drudgery usually connected with it.

COÖPERATION BETWEEN HOME DEMONSTRATION AND RESEARCH SPECIALISTS

MINNA C. DENTON

Assistant Chief, Office of Home Economics, U. S. Dept. of Agriculture

The urgent necessity for increase of our existing fund of knowledge of further research is at once apparent to the extension or other teacher who makes an honest effort to acquire first-hand information concerning almost any disputed detail of every-day practice. How much the malnourished child should gain in the spring months as compared with the fall; how much vitamine is contained in plums, or mutton, or canned tomato after cooked until thick, or turnip greens or warmed-over potatoes; what margin of profit there may be, for the woman who makes her own bread, or canned corn, or pectin jellies, or hats; which of the modern textile fabrics have passed satisfactory tests for durability; how to score an electric washing machine or a gas stove or a vacuum cleaner; whether fireless or pressure cooker represents better economy of time, effort, fuel, palatability, and nutritive values; what tests should be applied to determine whether the girls' clubs have learned what they should in their sewing or cooking classes; how much may wisely be attempted in the gardening and

canning budgets—these are a few illustrations of questions of great importance to many extension workers whose solution demands full information which is often difficult to obtain.

Better contact between extension and research specialists can be attained, only if extension specialists persist in demanding first-hand information rather than in depending upon other authority; only if they deliberately plan a campaign to “sell” their problems to the research workers; only if the research specialists can be persuaded to supplement their laboratory observations with adequate field studies, and to re-state their results in terms of field experience.

ADDITIONAL SPECIAL TRAINING FOR HOME DEMONSTRATION WORKERS

RUBY GREEN SMITH

The extension worker should be given more consideration in home economics courses. Non-essentials might be eliminated and more time given to courses applying to field needs. There are two ways of improving the preparation of the extension worker: require graduate study; change the requirements of the undergraduates so as to include a larger proportion of the cultural humanities and such specific aids as journalism, administration, and public speaking.

In order to meet the homemaker's needs the emphasis should be placed on home demonstration projects in the following order of their importance, in contrast to the emphasis which has been given to projects in the past. First, child training, as the child is the most important of crops. Second, community enterprises, such as projects for better schools, more libraries, and satisfying wholesome recreation. Third, household management so as to free the homemaker's woman power for the higher life of the home and the community. Fourth, foods and nutrition. Fifth, marketing and income. Sixth, shelter projects in homestead equipment and beautification. Seventh, clothing. This comes last because the mother of little children should sew less rather than more.

BUSINESS MEETINGS

Business meetings of the Extension Section were held August 1 and 5, Mrs. Rena Maycock, Chairman, presiding.

The opening session with an attendance of 82 was called to order by the Chairman. Stella Mather, State Leader of Nebraska, was appointed secretary in the absence of Frances L. Brown.

After the reading of the minutes of the last meeting, held June 28, 1921, at Swampscott, the following nominating committee was appointed: Mrs. Myrtle G. Cole, Chairman; May Secrest, Essie Heyle. A committee on resolutions was appointed to assemble thoughts which this section wished to have embodied in the general resolutions of the Association.

At the second meeting of the Section the nominating committee recommended that Nina B. Crigler of Kansas be elected Chairman for 1922-23, and Addie D. Root of Missouri, Secretary. Voted that the secretary cast the ballot for the officers named.

Grace Frysinger, Chairman of the Committee on Requirements in the Training of Home Demonstration Workers, gave a report of the work done by the committee up-to-date. The recommendations of the committee are as follows:

1. (a) That the first two years of training be no different from that of all home economics students, and that these years be utilized to train in the fundamental development, including science, literature, etc., and a minimum of technical courses, these being largely of a manipulative character.

(b) That the decision as to specialization be made at the end of the sophomore year or that such decision be made following a course on the scope of the field of home economics and that particular effort be made to explain to home economics students this newer and less understood field of home economics education.

(c) That the advanced two years be utilized for those courses which will broaden the horizon and social viewpoint of the student, and which require more mature judgment and experience—such courses should include economics, sociology, philosophy, etc. This period should also be used for courses in which the student may apply the basic principles studied in the earlier years in terms of the chosen field of activity.

II. That sufficient interest has been manifested in such agricultural courses as bee raising, dairy, poultry, horticulture, etc., as to suggest that a survey course in agriculture would be a highly desirable course for all home economics students who may possibly find their field of endeavor in extension work or for those doing resident teaching in the smaller towns and consolidated rural schools.

III. We urge that a definite effort be made to give all undergraduates a thorough appreciation of the field of extension teaching through courses in education and vocational guidance conferences.

IV. We believe that every prospective agent should have actual field experience and that this should be of approximately four to six weeks duration, one week at state headquarters gaining general knowledge of state conditions, personnel policies, and available help, and five to six weeks as assistant agent in a county with a successful home demonstration agent whose county conditions are fairly similar to the county where there is likelihood the assistant agent may be located.

In addition the recommendations of the committee are as follows:

I. We recognize the very great need of certain types of information which may generally be classified as "service courses." We recommend that such courses be taken subsequently to the four year course rather than during that time, which we believe should be devoted to general development and technical courses.

II. Since much of the work in extension is done directly with adults, we urge that courses in education be broadened to include consideration of the method of teaching the adult mind.

III. Realizing that the responsibility for recommendation of courses of study for approval of committees on courses of study in the various institutions rests upon the head of the resident home economics department, the committee recommend that the Extension Section authorize a copy of this report be forwarded by the secretary of the section to the head of the home economics department of every university and college, land grant and otherwise, for their earnest consideration in connection with revision of courses of study now offered, or proposed courses.

Report accepted.

Voted that the committee be retained to continue their work along the line of graduate study.

The report of the Committee on Resolutions was called for and given as follows:

1. The Extension Section favors the recommendation of Miss Secest of California that, inasmuch as home demonstration work is a development of home economics and so of interest to all members of the home, to that end we recommend that the term for the furtherance of home demonstration work be changed from that of "woman" to "home."

2. That we wish to express our appreciation for the gracious hospitality extended to us by the citizens of Portland, Corvallis, and of the Oregon Agricultural College.

3. That Dr. Moore and the two mothers who gave such a worth while demonstration be given our vote of thanks.

4. That the Home Economics Association take no action on the Voight Bill.

5. That we commend the action of the Secretary of Agriculture in raising the office of Home Economics to a bureau of equal standing with other bureaus of the States Relations Service.

Report accepted.

Voted that we recommend to the General Program Committee that the last session of the Extension meeting be not held the last morning of the program when it is too late to offer resolutions of vital importance.

Voted that the new chairman be empowered to appoint a program committee for this section for the following year and that such a committee begin work as soon as possible to get the desires of other members in outlining this program.

HOME ECONOMICS EDUCATION SECTION

HOME ECONOMICS IN ADULT CLASSES

ANNA E. RICHARDSON

Chief, Home Economics Education Service, Federal Board for Vocational Education

A study of the statistics of attendance at evening schools during the past 5 years shows that the country is recognizing a real need for adult education as a part of a national program of education.

Some factors which have stimulated an interest in evening schools are:

1. Illiteracy as cited from the draft figure.

2. Physical weakness as shown by the fact that one out of every three men were found unfit for service in the national army.

3. Industrial unrest and a recognition of vocational training as an important factor in job promotion.

4. A new social consciousness of the nation's responsibility for reaching all of its people with education.

The day schools have reached but a small group of boys and girls. The large number of our adult population dropped out of school in the early grades. Can we afford to limit our educational advantages to the small group who through good fortune in their early life had the opportunity for schooling?

Who are the women to be reached by home economics in evening classes?

1. Mothers of families who in addition to wage earning outside of the home must also assume homemaking responsibilities.

2. Mothers of families living on moderate incomes.

3. Young women at work who expect soon to go into homes of their own.

4. Young working and business women who want help in meeting the various homemakers' problems which face them, especially in regard to buying their clothes and choosing their food.

What should the school offer in the way of instruction to these women?

If we believe that the main function of all education is to adjust the individual to his environment we can best answer this first question by answering a further question. What are the demands which modern life makes upon these women?

1. Since we are agreed that every child has the right to be well born, it is imperative that our schools provide training which will aid our women to be physically fit both to bear and to rear children.

2. Since it is the home's responsibility to care for the child up to school age, the school must offer training which will fit our women to care for the physical, social, and moral development of the child.

3. Since modern life demands the greatest wisdom in expending the income, the school must offer courses which train in intelligent buying.

4. Every woman must not only perform her duties as a homemaker but she must also assume the responsibilities of a citizen. No training is complete which does not recognize this demand.

5. Modern life with its multitudinous activities makes it important that our evening classes not only offer vocational training but also training in the wise use of leisure time. This is as necessary for the home maker as it is for the woman employed in work in the factory or office. A true balance in education demands preparation for both work and recreation.

The 48 states are meeting this problem of instruction in home economics in adult classes and are widening their programs so as to reach larger groups of women with more varied training. Practically all of the states are using federal funds to stimulate this type of vocational education, although in most of the states the amount of state funds used is many times in excess of federal funds.

TEACHING CLASSES OF HALF A MILLION

MRS. ELIZABETH MACDONALD

Housekeeping Editor, The Modern Priscilla

Teaching a small group by word of mouth and instructing hundreds of thousands through the printed page are two phases of the same problem. The basis of true success in either must be technical knowledge, checked up and tested through actual experience.

Home economics teaching in the schools is going to have a precarious footing wherever the average mother suspects that her daughter's teacher has never kept house, or in any community in which the school committee men believe their wives can do a better job at homemaking than the instructor paid by tax money to hold classes in household management. The case of the printed page is even clearer than that of the school room. Here we deal directly with the pupil. She hires the teacher. She is mature, shrewd, and experienced. She can tell whether a piece of text was written about her job from imagination or from actual contact with a kitchen and a nursery.

In the early days of home economics, when the term was first dressed in capital letters, mere homemakers were open to conviction about the wisdom possessed by "trained experts." So long as these experts were of the quality of Mrs. Richards and Mrs. Lincoln the confidence was not betrayed. Succeeding such women, attracted by what was apparently an easy success, we have suffered from another group whose talking and writing has been done with no home experience except a vicarious one. Too much teaching, both in the form of talking and writing, is still done by women whose only practice in homemaking has been in a class room, a practice house, a kitchenette, or an advertising agency. Personal magnetism or literary charm cannot compensate for a greater ignorance of actual conditions than of the women to whom the speaking or writing is addressed.

In this conviction, that home economics teaching to be valid should be done only by trained women having actual and constant home experience, the Priscilla Proving Plant was established. It is a real home in the only thorough meaning of the word, i.e., a house lived in physically, mentally, and spiritually by a family group comprised of mother, father, and children. In this Priscilla Proving Plant all of the housekeeping material published in the Modern Priscilla is worked out, as well as our body of unpublished research on foods, household management, and domestic arts.

Among class-room teachers of home economics there is much careless criticism of magazine work. When these teachers have had real home experience, and such experience must include full responsibility in typical conditions, especially including the care of children, then we shall have vital articles. Home economics will then contribute to the home an advance in comfort and simplification of labor, rivaling the record so far held chiefly by commercial agencies.

ADJUSTMENTS DESIRABLE IN TEACHER TRAINING INSTITUTIONS

LOUISE STANLEY

Department of Home Economics, University of Missouri

The most important factor in producing better trained teachers of home economics is good college teaching. The future teachers learn more by example than by precept. The work of the class in methods will be nullified by poor teaching.

The instructors in the teacher training institutions must know state conditions and home conditions and problems in order to give subject matter which will function. They must develop in their students an appreciation of the adaptation they should make in the subject matter for particular groups. They should know school conditions in order to realize the problems the students will face as future teachers.

It is essential that a visiting teacher from the teacher training institution follow students into the field, at least for the first year of teaching. She will become acquainted with state conditions, find out the weak points in the teacher training program and, at the same time, be of direct service to the young teacher who is facing problems upon which she needs help. The results of the findings of the visiting teacher should be reported to the members of the staff.

The teacher training institution should provide facilities for observation of good teaching and for practice teaching in various types of schools for which students are being trained. Practice teaching should not be limited to class room procedure, but the student teachers should have an opportunity to participate in all activities which usually form a part of the duties of high school teachers.

The institution should select those students best fitted to teach. Many who do not want to teach are forced into it because other opportunities are not open to them. Others go into it until they acquire the experience and maturity required for other lines. This situation can be bettered by working out more satisfactory arrangements for placement. It would seem advisable that for work in which training and experience are desirable the graduates acquire it in assistant positions in these fields rather than in the public schools.

HOUSEHOLD MANAGEMENT CONFERENCE

THE NEED FOR THE APPLICATION OF THE FUNDAMENTAL PRINCIPLES OF ECONOMICS IN THE HOME

S. AGNES DONHAM

Association for Promotion and Protection of Savings, Boston

Economics for economics' sake has been the foundation upon which we, as home economics students, have seemingly based our study of the fundamental principles of economics in the past. Economics for home progress' sake is what we, as home economics teachers, should insist upon.

One economist has defined the science of economics as "the science of human choices." Its principles may be applied to any form of human activity. Economics for the individual varies from economics for the nation so far as the choices of the individual vary from those of the nation. In either case wise choice makes for economy and the principles which govern those choices are the same.

The science of economics has through study and analysis become technical in its language, and, because the common people have ignored it as a science and the students of economics have neglected to present the fundamental principles in a language which everyone could understand, there has grown up a feeling that it is a subject outside of everyday life, dependent for its very existence upon the theories of the student, and impossible of application to the problems of business or home life.

As teachers of home economics it is our duty to translate into the language of the homemaker the principles which govern wise choices in the home just as surely as they govern wise choices in our national and business structures. But interpretation is necessary. Possible application of principles must be taught; and we must do the work, not only because there is no one else who does it, but because we are apparently the one group standing where we may see both sides.

A short outline, developed from that published by Prof. T. N. Carver, of Harvard University, in his book "Elementary Principles of Economics," showing the source and utilization of income, whether private, public, or social, will best indicate what I want to show here of the interdependence of these four branches of economics.

Home Economics (The use of private income)

A. The family as producers—Buyers of raw materials, fabrics, foods; producers of finished goods

B. The family as consumers—Food, shelter, clothing, utilities, means of development

Business Economics

A. The production of private income

B. A source of public income

Government and Economics (Public finance)

- A. Sources of public income—Taxes, royalties, etc.
- B. The utilization of public income—Government expenditures

Social Economics

- A. Sources of social income—Production, exchange, and distribution of goods
- B. Utilization of social income—Consumption by homes, business, government

I am not an economist, I am a home economics teacher, searching for the truth which shall set right the thing which is wrong in our homes. We have too long believed that if we live on less than we have and do no evil to our neighbor we are socially and spiritually justified in spending as we choose. That our spending has a direct and immediate effect upon the business and social life of the nation and the world, that we, the homemakers are consumers and economically responsible for right or wrong conditions which exist in business, that we as citizens are responsible for the production and utilization of public and social income, seems never to have entered into the minds, and certainly is not included in the education of the ordinary homemaker, whether man or woman.

National waste has its beginnings in home and family wastes. Social wastes exist because of the attitude of the home. Our waste of natural resources, a national disgrace, will never be remedied until habits of saving have been established in the home. Waste of labor through idleness, poor adjustments, unemployment, lack of honest standards, is an economic problem, and becomes a home economics problem if we realize that the home standards are influencing business and industrial standards.

Men and women must weigh the cost and the benefit in the home and choose. And we must realize that wise choice in the home tends toward greater wisdom of choice in business, and society, and nation.

The homemaker needs:

1. Financial education—the earmarks of a safe investment, business forms and methods, simple accounting.
2. Marketing knowledge and understanding of the fallacy of boycotts, causes of price variations, effect of purchasing out-of-season foods, reasons for purchase of home products, cost of cleanliness and sanitation in foods, the advantages of present expenditure to obtain future results, factors in the cost of distribution of products and goods, the results of our demands in fabrics and fashions, the amount of our expenditures for gum, tobacco, candy, etc.
3. Balance of expenditures for transient luxuries with that for education, health, parks, and playgrounds.
4. Understanding of the results of ill adjustment of human labor, the effect of our desire to produce finished goods rather than raw materials, the call of industry vs. call of land.

All these affect home life and the cost of home essentials. Why have we so long considered them as belonging to a field apart from the home?

Our profession seems to be almost alone in having the entrance to both sides of this house of knowledge and application. Why do we continue to teach only of the arts and principles of life within four walls and forget that each one of these is built upon an economic foundation which we are ignoring, but which we have recognized in the name we have taken for our profession? If we are to confine our teaching to the principles of domestic science why not content ourselves with that title? If we aspire to be considered economists, we must in the near future prove our right to the use of the word.

It is our privilege as home economics workers to justify the use of our title by teaching that economic laws and principles must be applied to successful physical, intellectual, and spiritual life in the home.

ORGANIZATION AND ADMINISTRATION OF HOUSEHOLD MANAGEMENT WORK

A. GRACE JOHNSON

Oregon Agricultural College

The household management courses of our schools have developed because of a realization that we needed some courses in which all phases of home economics as well as allied subjects could be gathered together and focused upon the management of the home. This need is being met through regular classroom courses supplementing laboratory work which is done in home management houses usually known as practice houses.

For the successful management of a home one must not only know every phase of the job but must be able to correlate all of this knowledge so that the result is economically and socially efficient. In such a course we are able to check on the standards and efficiency of our students as in no other way, and what is still more important the student may check on her own ability. Our lecture work should give opportunity for the discussion of every activity carried on in the home management house. In the actual administration much depends upon the personality and experience of the person who supervises.

A group of from six to eight gives a valuable experience. The work should be so divided that there is given the greatest opportunity for the development of leadership, coöperation, and management on the part of each member of the group.

The family life should be as near normal as it is possible to have it. A few of our schools have introduced the problem of child care, and there seems to be no question in the minds of those schools having the courage to undertake such work that it is worth while from a number of standpoints.

It seems that we can safely say that home management as a separate division of home economics work has a place, and that the practice house has come to stay.

AIMS OF HOME MANAGEMENT

LUCY A. STUDLEY

University of Minnesota

Home management work at the University of Minnesota is organized primarily with three definite objectives in mind: first, to teach the management problems involved in homemaking; second, to organize the division of responsibilities for the activities of the household in such a way that the students who are taking the laboratory work in the home management houses shall carry as much responsibility as possible, the resident instructor acting only as adviser; and third, to teach or reveal to the student the relation of those managerial responsibilities to the development of a satisfactory home atmosphere.

In order to fulfill these aims effort has been made to introduce into the courses as many management problems as possible, as, for example, the management of children, and considering only incidentally those problems involving manipulative skill alone. It is because of this point of view that the houses in which the laboratory work of the course is conducted are called home management houses rather than practice houses or cottages, since the latter nomenclature does not seem to connote the real purpose of the course.

HOME MANAGEMENT WORK IN THE EXTENSION FIELD

M. MINERVA LAWRENCE

Extension Home Management Specialist, State College of Washington

The farm housewife has a right to expect and demand comforts and conveniences in her home similar to those surrounding her urban sister. Home management work, through the extension field, by means of demonstrations, is making it possible for the rural woman to obtain those helps which place her work on a par with the housewife in the city.

The scope of the work covers the designing of the floor plan with a view to offering the greatest convenience and comfort to the housewife in performance of the regular routine of household duties; interior finishing, decorations, purchase of equipment and furniture to exactly fill the needs and pleasures of the entire family. Added to this list of activities is included every phase of the business side of the home.

In order to develop the home management work most effectively, the demonstration method has been adopted, by which means the housewife herself tests the efficiency of time and labor savers and improved methods. Through individual tests and group tests, better known as "testing circles," which were originated in the state of Washington, entire communities have become interested in the use of many of the labor savers.

An important phase of the demonstration plan has been to instill into the rural housewife a desire to "pass on" the knowledge, benefits, and satisfaction

which have come to her through the privilege of using improved devices. The use of these devices has made it possible to follow better methods with less expenditure of energy, thus allowing her more leisure.

These may seem like small things in themselves, but they add enormously to the sum of daily life for the housewife, making all the difference between drudgery and a task in which one takes interest and pride.

THE THRIFT KITCHEN AS AN ASSET IN CITY HOME BUREAU WORK

EDITH M. BARBER

Home Bureau Manager, Syracuse, N. Y.

Thrift Kitchen! The name reminds us of those other days in war times when it was both patriotic and fashionable to speak respectfully of thrift. The Syracuse Thrift Kitchen is a veteran of the war but it has survived without disability. Established by the New York State Food Administration in 1918 to care for the surplus vegetables and fruits and well equipped for that purpose, it was used to full capacity during the summer. The fall made other demands upon the force of trained workers, and the organization proved itself of such value in problems of individual and community housekeeping that when the close of the war put an end to the Food Administration an effort was made by the people of Syracuse to place the work upon a permanent basis. This was accomplished through the formation of a City Home Bureau, officially a branch of the County Farm and Home Bureau but organized as a separate project. Salaries and running expenses have been financed by various means through combined public and private funds procured by the efforts of the executive committee of the organization.

The Thrift Kitchen as it stands now is the headquarters of the Syracuse Home Bureau which acts as a clearing house for the home economics problems of the community, the institution, and the home. In summer it is still used to an enlarged capacity by women who bring their jars and materials there. In the winter all kinds of group work are undertaken; projects in millinery, dressmaking, nutrition, and household management are carried out. Every morning, afternoon, and evening finds some activity going on in the kitchen. During the present year a Woman's Exchange has been organized in connection with the work and the quarters have been enlarged. This is of use in giving women an outlet for homemade products and also in raising standards for hand made articles.

Individuals, commercial firms, social organizations, and educational institutions, by their constant use of the trained service furnished by the staff of the Home Bureau from its headquarters, prove daily that there is a real place for a Thrift Kitchen in the community.

HOME ECONOMICS IN BUSINESS CONFERENCE

BROADCASTING HOME ECONOMICS THROUGH THE MAGAZINES

MARIE SELLERS

Home Economics Editor, Pictorial Review

I had the pleasure not long ago of speaking from the W. J. Z. radio station at Newark, New Jersey and as I stood on the roof, underneath the sending wires, it was really a wonderful experience to realize that the human voice could be carried in this way into thousands of homes, and be heard as far west as California, as far south as Panama, and even two thousand miles at sea. I have often thought of it since, in connection with my work, and realized that the magazines are really great big broadcasting stations taking a personal message each month into millions of homes. I like to think of them as extension workers going out to serve the great army of homemakers scattered throughout the country. Although these magazines cannot have the flesh and blood personality of a home economics teacher or home demonstration agent, or carry the human voice as does the radio, at the same time each publication creates a personality of its own. It builds up a loyalty and confidence in families where it is a regular visitor which causes it to be looked upon as a real friend.

Only one in the magazine business can appreciate the varied points of personal contact between the printed page and the American home. The letters that come piling into an office every month after a new issue is out are the best testimony to the fact that the service we try to render is a great big human thing. So you see how important it is for us to keep faith with our readers. And especially with the housekeepers who depend upon the household departments for so much help and advice. As home economics women are going out more and more into the business world and are becoming identified professionally with various enterprises that are outside the teaching field, the responsibility of our service to women increases accordingly. It is in the pages of the magazine, perhaps, more than anywhere else, that the educational and business fields meet. One soon realizes here how important it is that the business side of the work must keep the faith just as sincerely as the educational side.

The women who are now entering this big new phase of home economics are stepping in to command those positions in which they have a right to make a large contribution. Whether it is manufacturing, banking, advertising, or some other line of work touching closely upon home problems, the opportunities for trained women are far reaching. Take foods. Pick up any current woman's magazine, look at the food advertising, and compare it with that of

five or six years ago. Do you see a change coming about? Do you see the educational idea coming in more and more? Have you ever checked up as we do what manufacturers or advertising agencies employ women with home economics training? It gives one a very different feeling toward an organization to know that the facts being put out in advertising copy are supplied or carefully edited by one who knows. It is a great advantage to an editor seeking the latest information about a certain food to know that there is a trained woman connected with the firm that puts it out, who will cooperate in an honest educational way.

In advertising you hear a lot about getting the "reader's point of view." It was a fortunate day for the American home when progressive manufacturers wakened up to the importance of employing experienced women to supply correct statements as well as the "point of view." Foods, furnishings, labor-saving equipment, clothing, good looks, and health are primarily women's problems for they all have their being in the home. The business world has only just begun to use the home economics woman. The future there for us is very great.

THE EDUCATIONAL WORK OF BUSINESS ORGANIZATIONS

S. AGNES DONHAM

Extensive educational work in home management is being done by many prominent manufacturers and wholesalers. Eleven types of educational work are being carried on by these firms: daily paper advertising, daily paper reading articles, magazine advertising, pamphlets, samples and circulars, demonstration, lectures with or without demonstration, motion pictures, display and exhibits, bill boards, special reports of laboratory and research work.

Where an industry is too small to be able to afford especial and expensive educational work by an expert, the national association of manufacturers of that particular product frequently conducts the advertising on an educational basis. In the same way, when an industry is almost universal, as is the manufacture of electrical appliances, the national association takes charge of the educational work in order to have it uniform and evenly distributed.

The subject matter of the advertisements is often the result of laboratory experiments made by some one trained in home economics; lecturers and demonstrators are frequently graduates of home economics colleges, or normal courses. When the material is not compiled by home economics experts the statements made are apparently based upon the results of experiments or tests made by trained workers. There is a definite purpose running through the whole series, that is, definite instruction as to use; clear, honest statements of results to be expected; and few claims made without supporting fact.

The departments of home management toward which most of this educational work is directed by commercial firms seem to be as follows: the use of general utilities; cleansing, laundry, polishes; purchase and care of utensils; marketing, the points of choice, nutritive value, and comparative cost of various kinds of food.

The purchasing agent of the family is educated in the wise choice of supplies by the manufacturer through reports of laboratory tests of fabrics and colors, lectures on home decoration, and description of methods used in manufacturing mattresses, pillows, furniture, etc.

Retail department stores dealing in general dry goods or ladies' furnishings employ shopping advisers. Mail order houses make a specialty of educational catalogs and personal advice by letter.

In Boston one of the largest retail furnishing stores in the city maintains a clothing bureau which furnishes information regarding textiles, care of clothing, budgeting, suitability of materials and design, and style tendencies.

In the same field, but in another way, banks are beginning to create departments for the benefit and training of home managers by establishing home economics or extension departments where the housewife or husband can come for assistance in solving household problems of finance. Such policies consistently followed must result in sound educational work.

Dealers no longer depend upon silver spoons or clock certificates to sell their merchandise, but seem to have entered upon a campaign of education which is destined to sell their goods much more successfully because their later satisfaction will depend upon intelligent use rather than careless handling.

We may more and more expect to find a demand for women trained in home economics to work in home management through the laboratory or advertising departments of manufacturing firms. We must guard against over statement and against narrowness of outlook, developing our part of the work as broadly as possible, avoiding what was formerly called "commercialism," and creating, on a strong educational basis, good will for our respective firms, while we assist the homemaker to be a better home manager.

THE HOME ECONOMICS WORK OF BUSINESS ORGANIZATIONS IN FOODS

LOUISE FITZGERALD

National Dairy Council

The home economics worker is now recognized as necessary to a business organization in foods. She is doing a real service for her organization and the housewives of the country in placing the product in which she is interested on a high standard, selling it on merit alone, and whenever possible, showing the place of the food in a balanced diet.

A number of organizations having to do with the manufacture or distribution of foods make important contributions to the homes of the community by the preparation of exhibits, charts, motion pictures, literature, and demonstrations. These organizations offer a very interesting field to the research worker. Many industries, among them the milling and baking industry, the meat packing and canning industries, now maintain special research organizations. With the findings of scientists concerning the importance of certain foods, it would seem that the time is near at hand when almost every large industry will maintain a research department.

The field is new, the standards are high, and, with the invaluable assistance of those who are training women in home economics, we predict that many of the best trained home economics women will be attracted to business organizations.

HOMEMAKERS' CONFERENCE

THE HOME WITHIN AND WITHOUT

MRS. JOSEPH C. GAWLER

General Federation of Women's Clubs, Yakima, Washington

Theories are the base of all new discoveries, but it is practice that gets the work done. Housekeeping is the most practical thing in the world. Homemaking is housekeeping plus love and interest. Housework is a business that can be learned, just as the business of running a store, a mill, or a factory. It requires executive ability, and some people have more of that than others. Some people are better housekeepers than others, and always will be; but most people could be better housekeepers than they are.

The connection between heavy bread and the divorce court is not just a joke of the newspaper paragrapher. Diet plays a part in domestic harmony at which no true sociologist dares to scoff. It is said that we have turned the bringing up of our children over to the public schools; that we have entrusted the digestion of our families to the delicatessen store; and there is truth enough in the criticism.

The woman who utterly fails in the management of her home is personally at fault, unless she is handicapped by illness. Homemaking is now an acknowledged profession and demands preparation, and since the United States Government, universities, and colleges have come to recognize this, and have placed within the reach of every woman the results of their investigations, and

instructions covering all problems of the home, there is no excuse to be offered for continued inefficiency.

There are several reasons why women do not at once see homemaking as a career. Perhaps the first reason is that generally speaking, the home is unorganized and it is not recognized as a real business in which there are two partners. The woman should realize that the strain of the husband in earning the income should be met by similar earnestness on her part in the spending of it. We need analysis of the essential things that comprise the management of the home, including cooking, marketing, cleaning, budget making; the care of the children, recreation, and community interests. Perhaps the second reason is that our mental attitude is wrong. When higher education offered opportunities to women it was in fields that took them away from the home, and there was, and still is, a tendency to look upon work in the home as menial.

The management of a home is a business proposition, the true basis of which lies in a knowledge of the economic principles that underlie the expenditure of the family income. After this there is no right course but the making of a budget and the keeping of accounts. A budget makes you think before you spend, not afterward; it enables you to spend wisely; it stops guesswork; it helps to stop wasteful spending; it prevents paying a bill twice; it eliminates worry; and it helps to live more cheaply and better.

After the budget, the next consideration should be the food for the family. To get together a combination of proteins, carbohydrates, and fats that would give us just the right amount of nourishment, heat, and energy is the ever present problem in kitchen mathematics. In addition we must be sure we are serving the foods containing the essential vitamins. Government bulletins and publications by authorities in nutrition will aid us. This material is in non-technical language. If we aim to feed our families properly we must have the scientific spirit; we must know why this or that thing is better than another; and we must get our facts from acknowledged experts.

The present problem of the world is that we may live more rationally. We are adopting a more wholesome mode of living. The growing tendency everywhere is toward simplicity in the housefurnishings, in food, in dress; and this simplicity need not rob us of the beautiful in life, for the necessities may be artistic even though chosen for usefulness and not for show. We are eating less, and serving simply. The modern kitchen simplifies work, too, with its sink and tables at proper height, and closets, range, and labor saving devices arranged to produce the maximum of work with the minimum of energy. Laundry work is also simplified by the advent of the washing machine and the mangle. Some progress is being made toward simplicity in dress, and towards the standardization of wearing apparel and materials. And the time women are saving, the strength they are conserving is theirs for the enrichment of life; to do the thing which spells enjoyment, which supplements the workaday hours. Owners of big industrial plants have come

to know that recreation is an essential to good work. Owners of little industrial plants like homes must recognize the fact also. To some the recreation comes in one way; to others differently. It is our reaction to our idle hours which distinguishes personality.

The modern homemaker has civic duties; she must needs be a city maker too. This is partly because of the obligation imposed upon her by the ballot and partly because she cannot keep her children in the home indefinitely, or even for a very long time; that is, not exclusively in the home. And she must see that there is a city for them to go out into which shall not offer too great a menace to health or character. This means control of water, proper disposal of sewage, attention to food, especially milk, proper regulation of public morals, and an understanding of social legislation, both local and federal.

Here is where women's clubs come in. A woman single-handed would never think of starting out to tell city commissioners or police chiefs or health officers what they should do, but a woman, as part of an organization made up of other women similarly minded for the public good, not only dares but accomplishes what she set out to do. This influence of club women is recognized in a civic way by their appointment to committees and community enterprises, and by the enlistment of their coöperation in any great movement for the public good.

YOUR CHILD AND MINE

MRS. J. F. HILL

State President, Parent Teachers Association, Portland, Oregon

I am coming before you today representing the best combination on earth: the parent-teacher combination, the two important factors in the training of the child. Our aim is not merely to furnish a more perfect generation physically, but we want these children to face life with higher purposes and ideals, with an ambition to be of service to the world. We believe in the profession of motherhood but, since God intended every child to have two parents, we believe also in the profession of fatherhood, and we believe that homemaking will never reach its highest perfection until both father and mother qualify for entrance. We are grateful to know that the best schools and colleges today are including a course in homemaking. It is inspiring to know that 30,000 have had this training and 10,000 are now making homes. But when we train our daughters to run a home on a business basis, we must train our sons to be willing to recognize their ability and give them a fair chance to be dignified in their profession. Then will they be satisfied with careers as homemakers.

We know that the American man is the best family man in the world but it lies within his power to bring a newer and better order to the American home.

He might make a good beginning by providing the home with some of these modern time savers so that the mother may conserve her strength and have more time to be a companion to her family and friendly with the outside world. It is in the rural districts that you find the greatest need for these time savers. The farmer has provided himself with modern machinery but not yet has he fully appreciated the needs in the home. The mother still uses grandmother's equipment. A part of the income must be directed towards the improvement of the home as a means of contentment, raising the standards of the home life, bringing beauty and culture. Much money has been appropriated by the government for the improvement of live stock, and live stock will always be less important to the nation than children. Your child and mine will stand a much fairer chance to "grow in stature and wisdom" when he is born in a home which has been founded upon love and intelligence by two people trained for parenthood.

What has become of the "old home" and the old fashioned family circle? They have been relegated to the scrap heap. It is hopelessly out of date for the family to gather round the reading lamp. The home is no longer a place where father and mother and child may dwell together and find happiness.

I am glad that through home economics we are getting a different viewpoint of home. The world is recognizing more and more, because of you and coöperating agencies, the value of cleanliness, good food, right clothing, the element of beauty, that good health is basic and determines largely the child's mental and moral development. But there are still many children who are not getting these things. You cannot get the parents into your schools but through such organizations as ours you can take your schools to them.

We need you, you need us; and these homes need us both. You are doing a great work but there is much yet to be done before all children have this life more abundantly.

Then, too, children must be taught respect and reverence. They must not mistake freedom for license. Never was there a greater need for a strong religious faith than now, and we cannot afford to crowd God out of our homes if we want them to be real homes.

SCIENCE CONFERENCE

STANDARDS IN HOME ECONOMICS RESEARCH

MINNA C. DENTON

The successful research worker is the one who has come nearest to finding all the variable factors which affect the solution of her problem, who has established a standard test procedure with a definite end point, who has repeated her tests until results are predictable, who has reported her experiments so carefully that it is possible for the reader to repeat them, who has carefully limited her generalization, who has been able to suggest a hypothesis which accounts fully for the observed facts, and perhaps even to present more or less complete experimental proof of this hypothesis.

The student of the effect of beating cake batter must recognize and allow for 60 to 75 varying factors which affect cake texture, or more than that; she must standardize the process of cake making with regard to all these factors; she must devise some method of measuring cake texture as accurately as its volume is measured; she must report her experiments for others to verify; she must not apply her results to cakes in general, but only to the variety of cake and to the particular combination of conditions with which she has experimented; and lastly, she should, if possible, identify the phenomena observed in cake batters with the laws which govern colloid behavior in general.

LINE OF RESEARCH IN HOME ECONOMICS

ELIZABETH MILLER

Iowa State College

Within the past few years, the application of research to home economics has been given an impetus similar to that which agriculture experienced a half-century ago. Just as research in agriculture, by reducing the cost of production, by providing better distribution of farm products, and better methods of marketing, has become a matter of national concern, so should research in home economics contribute to the efficiency and success of the entire nation by producing more useful and happier citizens.

The importance of greater knowledge concerning the nutrition requirements to our physical well-being has been dramatically demonstrated by animal feeding experiences. The way is open for the home economics research worker to aid, not only in obtaining further information concerning what constitutes a complete diet, but also in making the applications to human feeding of the results of animal experimentation.

Since the women as homemakers are said to make 90 per cent of the purchases in the country, it seems logical that they should have some specialized training for their job as consumers.

The unique accomplishments to be expected of graduate work in home economics will be research in the affairs in the home, in the administrative aspects of homemaking, in training for motherhood, in analysis of the basic household activities. Needless to say, those who are to direct research along so great a variety of lines must have a very thorough and comprehensive training, not only in chemistry, physics, biology, but also in economics, sociology, psychology, and history.

ENERGY EXPENDITURE FOR HOUSEHOLD TASKS

C. F. LANGWORTHY

Chief, Office of Home Economics, United States Department of Agriculture

Continuing earlier work (Energy expenditure in sewing, C. F. Langworthy and H. G. Barott, *Amer. Jour. Physiol.* 59, 1922, No. 1, pp. 376-380), respiration calorimeter experiments were made with a young woman as subject, 5 feet, 6 inches tall, and weighing on an average 134 pounds. Comparison was made of machine sewing, foot operated; machine sewing, electric motor operated; hand sewing at different rates; dishwashing with a working surface at different heights from the ground; ironing; and sweeping.

In general, the results were in accord with those obtained in previous work. Expressed in terms of heat, the energy expended for the work alone in sewing on the foot-operated machine was 20.9 calories per hour; motor operated sewing machine, 8.9 calories per hour; hand stitching, 9.4 calories per hour in a test on sheets, at the rate of 30 stitches per minute; and 5.6 calories per hour at the rate of 18 stitches per minute. In ironing, the energy expended for the work alone was 24.0 calories per hour, and in sweeping, 41.0 calories per hour; with dishwashing the energy expended with too low a working surface (75 centimeters), was 32.3 calories per hour; with a working surface at the height of 92 centimeters, 24.9 calories per hour; with the working surface at a height of 107 centimeters, 22.6 calories per hour; and with the working surface at a height of 117 centimeters, 22.9 calories per hour.

Editor's Note: Besides the papers listed on the program, the following brief reports of research work being carried on in home economics departments of different colleges and universities were presented.

RESEARCH IN THE UNIVERSITY OF CHICAGO

KATHARINE BLUNT

Nutrition, Food Chemistry, and Experimental Cooking. Three studies by Assistant Professor Lydia J. Roberts on the nutrition of children will be

published shortly. A nutrition survey in a rural region in Kentucky, and a study of the diets of the pre-school children in Gary, Indiana, which are to appear as bulletins of the U. S. Children's Bureau, are now in press. A report of the Child Health School held at the University of Chicago in the summer of 1920 has been accepted by the U. S. Bureau of Education as one of their series of health education bulletins.

Hughina McKay, A.M. 1922, for her master's thesis, made a nutrition and health study of the elementary school of the University of Chicago. The survey included weighing and measuring, diet and health questionnaires, a study of the school lunch, and of the medical records.

Assistant Professor E. G. Halliday has worked up a satisfactory and simple method for the quantitative determination of pectin in fruit juices; and with several of her students, especially Helen Burton, M.S. 1922, and Ruth Jordan, is attacking the jelly problem by calculating the concentration of jellies made both from fruit juices of known pectin, acid, and sugar content, and also from pure isolated pectin, acid, and sugar dissolved in water without boiling to concentrate. So far she has not obtained jelly with less than 0.5 per cent pectin.

Virginia Bauer is making comparative tests on children before breakfast and later on the same day, three and a half to four hours after their usual breakfast. So far, five children observed on nine days, have shown an average basal metabolic rate only 0.4 per cent higher just before lunch than before breakfast. The routine observations of basal metabolism of the children of the University Elementary School are being continued. So also are further observations on college women.

Kate Daum, for her doctor's thesis, is investigating some of the changes brought about in milk by different, carefully controlled methods of heating. She finds that the changes in citric acid, hydrogen ion concentration, and carbon dioxide are not especially significant, but that the amounts of calcium and phosphorus precipitated vary not only with the length of time the milk is heated, but even more with the length of time it stands and settles after heating before the analysis is made. For example, when the milk is heated for 30 minutes in the equivalent of a double boiler and analyzed immediately, the loss in calcium averages 10 per cent of the original quantity and in phosphorus 9.8 per cent; and when boiled for three minutes the calcium loss is 4.5 per cent and the phosphorus 7 per cent. After 24 hours, however, the calcium losses are 22 per cent by either method and the phosphorus losses about 17 per cent.

Home and Institution Management. Mrs. Heiner, instructor in home economics, is coöperating with the Illinois Home Economics Association in its survey of household activities, and with some of her students is tabulating and classifying the results of the study.

Katharine McFarlane for her master's thesis is studying the curricula of the various universities and colleges which train for institution management, to learn the degree of standardization and the scope and content of the courses.

Home Economics Education. Assistant Professor Mabel B. Trilling is working on textile objectives in elementary and secondary schools.

Leona F. Bowman, instructor in home economics, has collected information on the organization of home economics courses in 197 schools in typical cities of 20,000 or more in 43 states. Among other points she finds that in 82 per cent of the schools home economics is an elective, not a required course; and that the average amount of time required for 1 unit of credit for graduation is eight 40-minute periods weekly for 36 weeks.

Florence Williams, A.M. 1922, has attempted to set standards of attainment for ability in machine sewing from the sixth to the twelfth grade, inclusive. The standards are determined on the Knapp and Williams scale for judging machine sewing, and were secured by taking the average scores from some 3500 samples, secured in numerous schools. The results of the investigation should prove helpful to the classroom teacher in determining whether the work of her class is up to standard or not.

Olga Hoesly, A.M. 1922, has made a study of the required and elective courses in home economics in normal schools. The results give the total number of college hours, hours of related work and hours of education required for graduates in the two and four year courses.

Regina Friant is investigating the status of vocational home economics in secondary schools, making an analysis of courses of study and of state plans for certification of teachers. The results obtained will be compared with those in general home economics.

FACTORS DETERMINING THE QUALITY OF WHITE SAUCE IN LARGE QUANTITY COOKING

MARY LOUISE MEUSER

Kansas Agricultural College

Mixing hot fat and flour together before adding to the milk was shown to be a better method of mixing white sauce than was mixing cold fat and flour, or cold milk and flour. Cooking in the steam-jacketed kettle gave better results than in the double boiler. When multiplying the recipes for half-pint quantity by 16, so as to make 1 gallon, it was found necessary to cut the amount of fat used by $33\frac{1}{3}$ to 50 per cent. Equal weights of fat and flour seemed to give the best results, in this quantity. The sauce was found to become thinner as it continued to cook. Salt, when added before cooking, caused thinning and curdling; it should be added at the end of cooking.

STUDIES ON JELLY AND BUTTER CAKE

JESSIE WHITACRE

Utah Agricultural College

Jelly Yield, and Sugar Crystal Formation in Certain Apple Jellies. The apples were cooked in various ways, but all yielded about 1.8 pints of juice per pound of apples; except those cooked in pressure cooker for 10 minutes at 10 pounds, which yielded 2.5 pints of juice per pound.

A. 1 pint of juice cooked with $\frac{1}{3}$ pint of sugar, yielded 5 oz. jelly.

B. 1 pint of juice cooked with $\frac{1}{2}$ pint of sugar, yielded 8 oz. jelly.

C. 1 pint of juice cooked with $\frac{2}{3}$ pint of sugar, yielded 10 oz. jelly.

As to quality, jelly B was considered preferable.

Large sugar crystals formed occasionally on the walls of the tumbler, under the paraffin layer, or even in the center of the jelly mass. Whether this was due to low concentration of colloids other than pectin, or to lack of acid and subsequent failure to invert a sufficient amount of sucrose, remains for us to determine.

Optimum Proportions of Various Ingredients for Making Butter Cake, at an Altitude of 4800 Feet. The formula chosen called for $\frac{1}{3}$ cup butter, 1 cup of sugar, 2 eggs, $\frac{1}{2}$ cup milk, $1\frac{3}{4}$ cups of flour, $\frac{1}{4}$ teaspoon salt, $2\frac{1}{2}$ teaspoons baking powder; and though perfectly satisfactory at sea level, it "fell" and showed coarse grain, speckled crust, and a waxy, sticky texture, when made up by weight in the same proportions under controlled conditions, at Logan. A decrease in sugar of 70 grams (5 tablespoons, or approximately 33 per cent) and in flour of 14 grams (2 tablespoons or about 7 per cent), together with addition of 28 grams of butter (2 tablespoons, or more than 33 per cent), improved the cake considerably. Further work is in progress.

VARIATIONS IN VOLUME OF HOUSEHOLD MEASURING CUPS

JEAN STEWART

University of Nebraska

Seventy-five names of manufacturers of these cups (glass, tin, aluminum, enamelware) have been secured. Rough tests show variations of 15 per cent, both above and below the standard. As soon as our collection is complete, or as nearly complete as we can make it, all are to be subjected to careful tests for variations in volume of cup and of the fractions marked on the walls. These tests are to be made by the Weights and Measures Division of the U. S. Bureau of Standards, and a reasonable tolerance limit is to be set. It is believed that a full report may be ready early in the autumn.

STUDIES OF CARBOHYDRATE TOLERANCE OF NORMAL WOMEN

EMMA L. WARDELL

University of Illinois

The earlier literature contains the records of a number of more or less definite observations on the carbohydrate tolerance of normal women and also of a much smaller number showing the effect of the menstrual cycle on carbohydrate tolerance. Unfortunately the results obtained in different investigations are far from uniform; some indicate that glucose tolerance is not affected by the menstrual period, others indicate an increase in tolerance and still others a decrease. This very lack of uniformity suggests, however, that it would be interesting to learn definitely whether or not the menstrual period affects the carbohydrate tolerance of normal women and then to learn whether the change, if there be one, is an increase or a decrease in tolerance.

Throughout our experiments we have used the quantitative estimation or urinary elimination of sugar after ingestion of glucose as the means of estimating the glucose tolerance of our subjects.

Our first investigations were made with the Benedict Osterberg method of estimating urinary sugar, but the preliminary precipitation with mercuric nitrate was rather slow and laborious and our work has been greatly facilitated by the use of the new Benedict method published about a year ago.

At present we are not quite ready to make a detailed statement of results; such a report must be reserved for a later communication.

A STUDY OF FAT USED IN DEEP FAT FRYING

TEACHERS COLLEGE, DEPARTMENTS OF FOODS AND COOKERY, BIOLOGICAL CHEMISTRY, AND HOUSEHOLD CHEMISTRY, COOPERATING

The object of the investigation was threefold:

1. To determine the number of times a fat can be used effectively for deep fat frying.
2. To determine whether there is an increase in fat absorption by food in proportion to the number of times a frying medium has been used.
3. To determine the chemical and physical changes which take place in fat as it is used for deep fat frying.

Doughnuts were the food fried. Lard and mazola were the fats used. Twenty fryings were made with mazola and nineteen with lard, there being insufficient lard remaining for the twentieth frying.

The Cookery Process. Initial weight of fat for frying—15 lbs. 5 oz. Kettles identical in shape and size were used for the two fats. The period of fryings extended over ten weeks. The fat was strained after each frying.

Temperature of fat for frying was 370°F. The cold dough caused the temperature to fall toward 360.

Weight of dough fried each time was 473 gms., 20 doughnuts of the same size and shape, from the first rolling. Temperature of uncooked dough was 56°F. Number of doughnuts fried at one time—4. These were dropped in by twos, ten seconds apart, fried one minute without turning, then turned and fried one minute more.

Effect upon Doughnuts. The doughnuts were judged by use of a score card, $\frac{1}{2}$ hour after each frying. There was a noticeable drop in quality after the eleventh frying with both series of doughnuts. The doughnuts became more greasy and very rough on the surface.

Fat Absorption. No tests were made for fat absorbed by the doughnuts fried with mazola.

Three series of twenty fryings each have been carried through with the lard, and the doughnuts were tested for fat absorption each time. The amount of fat absorbed varies, rising and falling at irregular intervals throughout the series.

Changes in Fat. The data now accumulated on the life of a frying fat, include accurate chemical determination of saponification, acid, Reichert Meissl and iodine numbers, as well as quality changes in the fried material, upon both lard and mazola after each frying with a standardized batch of doughnuts through the twentieth frying. The results confirm the previous preliminary observations that the principal change is an oxidation and that this splitting occurs to a degree at the double bond. The rise of the acid number is, however, too great as compared with the drop in iodine number to warrant the idea that oxidation is the sole cause of rancidity, and hydrolysis probably takes place to a considerable extent. The mazola proved to be much less changed in the process than the lard, resisting the heating process well. From the practical viewpoint we are aiming at an exact evaluation of the chemical factors which produce rancidity in frying fat with a view to studying and publishing the best methods of conserving and purifying to be used by the housewife. Results will be published in detail in the JOURNAL.

OUTLINE OF RESEARCH

In addition to the work on fats reported above, the departments of Biological Chemistry and Foods and Cookery report the following:

Work on the Effect of Cooking upon the Antiscorbutic Vitamin in Cabbage. Evidence seems conclusive that when cabbage is cooked in the open kettle at a temperature and time necessary to produce a palatable article for the table the destruction is sufficiently great to make it necessary to use at least 20 grams of cooked cabbage to secure the vitamin equivalent of 1 gram of raw cabbage.

From experiments with infants and guinea pigs on comparative dosage it would seem that the former require about 5 times the protective dose of the latter and the adult's requirement is probably not greatly in excess of the infant. On this basis 5 grams or $\frac{1}{8}$ ounce of raw cabbage would protect a man as would 100 grams of cooked cabbage or $3\frac{1}{2}$ ounces. The pressure cooker, while using a higher temperature, produces a cooked cabbage of equal quality in much shorter time (20 minutes vs 45 minutes) and this shorter duration is apparently sufficient to offset the higher temperatures. In our experiments the pressure cooked cabbage suffered no more and no less destruction of its vitamin than did the open kettle cooked cabbage.

Peanut Flour as Protein Supplement to Wheat Flour. With the assistance of Rena S. Eckman, of the University Hospital of the University of Michigan, the peanut flour studies have demonstrated that when wheat flour is supplemented by peanut flour and by meat residue as sources of protein and in equal protein equivalent, the peanut flour supplies all the protein necessary for growth and reproduction quite as well as the meat residue. Rats have now been carried to the third generation on the diets.

INTERNAL TEMPERATURES OF FOODS DURING COOKING

MINNA C. DENTON

With the exception of meats, eggs, and custards, most foods cooked under ordinary household conditions reach a temperature of approximately 100° (boiling point) throughout their mass by the time they are "done," whether cooked in boiling water, in an oven, or in hot fat at 200°C., more or less. However, it may readily be shown that the temperature attained within a given time period is altogether dependent upon the size of the food mass. Small pieces of meat reach 100°C. within a short time, though they may not be "done" immediately upon reaching this temperature; while joints weighing several pounds may be perfectly done at 60° to 80°C. Boiled potatoes weighing 200 grams or less, are done at 97° to 99°C., those weighing 300 grams or more, are done at 90° to 95°C.

It may also be shown that increase of time of cooking will often make unusually low temperatures equally effective with higher ones; e.g., the initial coagulation temperature of a milk-and-egg custard, constantly stirred during cooking, may be anywhere between 75° and 95°C., varying with the rapidity of heating; no doubt wider variations could be attained.

The object of such tests is the general interest in the effect of cooking on vitamins and on food poisoning bacteria and their toxins. A study of pumpkin pie to determine the temperature of pie when cooking, in order to see if pumpkin could cause poisoning, shows that the interior does not reach the boiling point.

NUTRITION EXPERIMENTS

MARTHA KOEHNE

University of Washington

Animal Feeding Experiments. The main object of this work is to provide illustrative material for class teaching and extension work. The selection of type of research problem must be of such a nature as to provide this material in greatest amount. The problem underway now is comparative effect of quality of food and chewing on tooth decay. The food in no case requires chewing, but, with each type of diet used, one series is provided with sticks of wood and wooden shavings to chew on, the other series is kept in glass cages with tissue paper shavings for bedding.

Six typical diets are used, each of which is representative of food combinations actually used in many American homes. Work has not progressed far enough for report of conclusions. Reproduction, growth, mortality records are kept on all animals used, and the bones of all that die are kept.

Food Intake in a Summer Camp for Undernourished Children. This work involved keeping an accurate record of food consumption of the 30 individual children, as well as the proportion of this food that was derived from dairy products. One camp consisted of 20 children kept for 5 weeks, and 14 children for 5 weeks, 4 of the latter 14 being hold-overs from the first group. The complete report is to be published in the *Archives of Pediatrics*.

THE RELATIVE COST OF GAS AND ELECTRICITY FOR COOKING PURPOSES

MARTHA E. DRESSLAR

University of Washington

In those parts of the country where electricity is sufficiently inexpensive to be used as fuel for cooking purposes, a question frequently asked is, "Which is the more expensive, gas or electricity?"

At the University of Washington we have made an effort to answer this question under given conditions. Menus for a family of five were used as the basis for the selection of dishes to be prepared. The menus were planned to take into consideration the requirements of the well balanced meal, and use of left overs, the effective use of the particular stove, and the inclusion of a sufficient number of plate and oven operations to show the total fuel consumption representative of the fuel consumption of the user of gas or electricity for cooking purposes. Results obtained by this experiment require too much qualification to be presented in this abstract, but will appear in an early number of the JOURNAL.

COUNCIL MEETINGS

The Council met August 1, 3, and 4 with the following members present at one or more sessions:

Mary E. Sweeny, presiding; Kate Bear, Isabel Bevier, Alice F. Blood, Gladys F. Branegan, Mary de Garmo Bryan, Myrtle Cole, Lenna F. Cooper, Grace G. Denny, Ruth Dickey, Cleora Helbing, Katherine Jensen, Frances Kelley, Alice Kewley, C. F. Langworthy, Blanche Lee, Helen Livingstone, Rena Maycock, Ava B. Milam, Maude Murchie, Effie Raitt, Anna Richardson, Margaret Sawyer, Jenny Snow, N. E. Stafford, Frances Swain, Jessie Whitacre, Marion White.

After the address of the president the following business was transacted:

COMMITTEE REPORTS

Regional Organization. Report read by Miss Branegan in the absence of Miss Weigley, Chairman.

The Regional Organization Committee presents a report on the status of affiliation of the states with the American Home Economics Association up to July 15, 1922.*

The following states have completed affiliation with the American Home Economics Association: Arizona, Arkansas, California, District of Columbia, Florida, Illinois, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Montana, Nebraska, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee, Utah, Washington.

The following states are reported as voting affiliation but have not yet completed affiliation formalities: Alabama, Georgia, Mississippi, New England (6 states), Texas.

The following states are making inquiries which indicate that the matter is being considered: Delaware, Idaho, Iowa, Indiana, Kansas, Missouri, Pennsylvania, Virginia, W. Virginia, Wisconsin, Canada.

States from which no information is available: Colorado, Nevada, New Jersey, Wyoming. Affiliated states according to regions showing total membership from states.

<i>Region</i>	<i>Membership</i>	<i>Region</i>	<i>Membership</i>
<i>Eastern</i>		<i>Pacific</i>	523
New York	185	Arizona	46
		California	223
<i>Central</i>	787	New Mexico	11
Illinois	298	Oregon	64
Kentucky	26	Utah	78
Michigan	189	Washington	101
Minnesota	55		
Ohio	219	<i>South</i>	478
		Arkansas	64
<i>West Central</i>	144	D. C.	59
Montana	45	Florida	22
Nebraska	32	Maryland	90
N. Dakota	37	Louisiana	101
Oklahoma	14	N. Carolina	46
S. Dakota	16	S. Carolina	32
		Tennessee	64

Total membership through affiliated Associations 2117.

* Corrected to August 1, 1922.

It will be seen from this report that 25 out of 49 states, including the District of Columbia, have completed affiliation and that of the remaining 24, 10 have voted affiliation, leaving only 14 states and Canada which have taken no definite steps other than inquiries. Of these, Canada and 10 others have started inquiries, leaving only 4 states in which no efforts, apparent to the Committee, are taking place.

One action of considerable importance which the Committee would like to report is that of the Southern Home Economics Association which, at its meeting in Florida, April 10, 1922, voted unanimously to become the Southern Region of the American Home Economics Association.

With the number of states now organized and with as many affiliations pending as there are, the Committee believes that another six months will see all but a few states ready to put through a program of home economics.

Report accepted.

For changes and recommendations concerning regional organization see Executive Committee recommendations 2-7, and 13, pp. 587 and 588.

Journal Board. For report see business meeting p. 589.

The Council voted to grant Mrs. Norton her requested leave of absence. See Executive Committee recommendation 12, p. 588.

The Council went on record as favoring a full time editor for the, JOURNAL if after a study by the Finance Committee it was found possible.

The subscription and financial status was reported by Mrs. Bryan, Editor, as follows:

The report for the first part of the year was given at the Chicago meeting and was printed in the June JOURNAL. Since that report, 1034 letters have been sent to members of the Association who are not subscribers; 367 to members of the American Dietetic Association; 600 to schools in regard to student subscriptions. The net increase in subscriptions June 1921-June 1922 is 1123 (567 student and 556 regular).

The deficit in JOURNAL operations January-June, 1922 was \$816.21, or \$507.54 less than for the same period last year.

The advertising January-June 1922 was \$2168.01, or \$449.52 more than for the same period last year.

Report accepted.

Standards of Home Economics in Colleges. Report read by Miss Richardson in the absence of Miss Atwater, Chairman.

In accordance with the recommendations made at the meeting of the Council in Chicago, Miss Atwater took up with Dr. Samuel P. Capen, Director of the American Council on Education, the question of the standardization of Home Economics in colleges, and asked for the help of the American Council on Education in formulating standards necessary for the inclusion of technical and professional schools in the approved list of educational institutions. Dr. Capen felt that the Committee would be glad to undertake such a definition and has promised to present the matter to the Committee on College Standards at its meeting on October 13th and 14th. It seems necessary to await a further report from Dr. Capen.

Report accepted.

Finance. Report read by Miss Donham in the absence of Miss MacLeod, Chairman.

TRIAL BALANCE, JUNE 30, 1922

Debits

Association

Salaries—officers.....	\$250.00	
Salaries—clerical.....	271.99	
Printing and stationery.....	83.05	
Postage.....	44.41	
Affiliation dues.....	5.00	
Office.....	106.50	
Meetings.....	11.00	
Bulletin.....	283.61	
Rent.....	24.00	
Telephone and telegraph.....	5.60	\$1,085.16

Journal

Salaries—officers.....	\$1,349.99	
Salaries—clerical.....	688.00	
Printing and stationery.....	63.37	
Discounts to dealers.....	150.24	
Distribution.....	6,260.30	
Travel.....	170.00	
Telephone and telegraph.....	24.03	
Office.....	68.78	
Postage.....	153.63	
Rent.....	96.00	9,024.34

Equipment.....	505.82	
Richards Memorial Fund.....	4,070.56	
Cash—Balto. Trust Co.....	\$3,003.42	
Cash—Balto. Trust Co. Sav. a/c.....	669.91	
Cash—Miss Baldwin.....	11.61	3,684.94

\$18,370.82

Credits

Association

Publications.....	\$18.92	
Dues.....	2,201.25	
Advertising.....	75.00	\$2,295.17

Journal

Subscription.....	\$5,752.15	
Numbers.....	143.26	
Reprints.....	139.40	
Advertising.....	2,168.01	
Postage.....	5.29	8,208.11
Excess payment.....	8.25	
Executive Secretary Fund.....	1,159.70	
Institution Section.....	110.59	
Life Membership.....	255.00	
Richards Memorial Fund.....	\$4,305.87	
Richards Memorial Fund, Misc.....	584.74	4,890.61

Surplus.....	1,442.28	
Exchange.....	1.11	\$18,370.82

STATEMENT OF OPERATIONS, JANUARY 1 TO JUNE 30, 1922

Association

Receipts			
Publications.....	\$18.92		
Dues.....	2,201.25		
Advertising.....	75.00	\$2,295.17	
Expenditures			
Salaries—officers.....	\$250.00		
Salaries—clerical.....	271.99		
Printing and Stationery.....	83.05		
Affiliation Dues.....	5.00		
Postage.....	44.41		
Office.....	106.50		
Meetings.....	11.00		
Bulletin.....	283.61		
Rent.....	24.00		
Telephone and telegraph.....	5.60	1,085.16	
Profit.....			\$1,210.01

Journal

Receipts			
Subscription.....	\$5,752.15		
Numbers.....	143.26		
Reprints.....	139.40		
Advertising.....	2,168.01		
Postage.....	5.29	\$8,208.11	
Expenditures			
Salaries—officers.....	\$1,349.99		
Salaries—clerical.....	688.00		
Printing and stationery.....	63.37		
Discounts to dealers.....	150.24		
Distribution.....	6,260.30		
Traveling.....	170.00		
Telephone and telegraph.....	24.03		
Office.....	68.78		
Postage.....	153.63		
Rent.....	96.00	9,024.34	
Loss.....			\$816.21
Net Profit.....			393.80

The June 30th, 1922, trial balance shows a surplus of \$1,210.01 for the Association. The 1921 deficit of \$819.89 has been wiped out. The Association budget was based on dues of \$3,000.00 and on June 30th \$2,201.25 had been received from that source.

The JOURNAL, however, shows a deficit of \$816.21. The JOURNAL budget calls for an income of \$16,150.00 from subscriptions and at the present time only \$5,752.15 has been received. The latter half of the year always brings in more subscriptions than the first half and it is hoped that during the next five months the number of subscriptions will be at least double the number of the last seven months.

Larger membership in the Association, more JOURNAL subscribers, and, last but not least, prompt payment of dues and subscriptions, are the three things which will help the finances of the Association and JOURNAL.

Report accepted.

For discussion of budget see Executive Committee recommendation 11, p. 588, and recommendation 1 of Committee on Committees, p. 586.

Voted that the Association pay the expenses of the president to the annual meeting and that this be made a precedent for other annual meetings.

Voted that the treasurer be authorized to turn over \$300.00 for expenses of speakers to the meeting.

Program of Work. The following recommendations were presented by Miss Swain, Chairman:

I. It is assumed that the work of various committees engaged in research, legislation, and other specific activities shall be continued throughout the year.

II. It is assumed also that the program of state and regional organization shall be continued with the hope that by the time of the next annual meeting all states will have completed affiliation. The state organizations must also recognize their responsibility in drawing into their organization the various groups that represent the work in the community, such as homemakers, teachers, extension workers, institutional workers, and business women. Each group should have an opportunity for expression in the plans and meetings; if the groups are large, sections may be desirable.

III. It is recommended that each state organization undertake a survey of the state to determine the organizations and agencies whose activities touch those of the American Home Economics Association and to study methods of coöperation, points of contact, and specific lines along which the state organization is to set to work. A report of this survey shall be presented at the next annual meeting.

IV. Not the least important portion of the program of work facing the Association is the establishment and recognition of standards of professional preparation, qualifications, salaries, types and conditions of work, and equipment. Each state organization is urged to determine what standards are desirable, and at present advisable in the various fields of home economics work in that state, including teachers and supervisors, extension workers, dietitians, nutrition workers, and experts in business and industry.

V. Suggestions for local work:

1. Inasmuch as most school and health groups are agreed that health instruction must be given to all pupils in the school system and that nutrition is a vital subject in this education, it follows that the home economics teacher, on account of her unique training, is the logical person to assume the responsibility for the nutrition subject matter included. In view of these facts, the following suggestions are made:

(a) That the home economics teacher share the responsibility for a health program for the entire school in coöperation with the specialists in allied subjects, such as the school physician, dentist, physical training teacher, and nurse.

(b) That the home economics teachers give a definite course of instruction in nutrition to the grade teachers who will in turn be responsible for incorporating it in their regular school curriculum.

(c) That the home economics teachers reach the parents of the community through such groups as the Parent-Teacher Association, Mothers' Council, and clubs.

(d) To further this unified program, courses in nutrition should be offered by the departments of home economics of normal schools and universities to elementary teachers, physical training teachers, nurses, and home visitors, and special courses to home economics teachers in order to equip them to assume this new responsibility. It is desirable that these courses be accompanied by work with classes of children.

(e) That the National Association consider the possibility of standardizing the nutrition subject matter to be included in the health instruction in the public schools.

2. A recognition of the child, its needs and its training as a vital part of the program of home economics. As this demands an application of the mental, social, and spiritual, as well as the physical, development of the child, it is urged that in organizing courses dealing with the child, the contributions of the psychologist and sociologist, as well as the physiologist, be correlated with the home economics instruction so far as offering material dealing with all-around child development.

(a) Provisions should be made that adequate courses dealing with the "child" are offered by the public schools through day, part time, and evening classes to young mothers, young women who contemplate early marriage, or where statistics bear evidence of the probability of early marriage, girls from sixteen to eighteen years where conditions and needs of the groups justify such courses.

(b) As we realize that the well trained sympathetic teacher is essential to the success of such a program, the American Home Economics Association should urge the inclusion of well planned courses to be supplemented wherever possible by practical work with the children as a part of the training of all teachers of home economics who desire to teach the general problems of homemaking, rather than some of the special phases of home economics.

3. Economics: This field offers opportunities for cooperation that have been too much and too long neglected. In spite of all of the discussion of the last few years, the emphasis is placed on the technical side rather than on the economical. We have continued to teach only the arts and principles of life within four walls, and we forget that these are built upon an economic foundation which we have recognized in the name of our profession.

Home economics workers should be alive to the relation of shelter and surroundings to general health and efficiency, and should be ready to take part in movements looking toward improved conditions of housing. Courses dealing with the material equipment of the home should emphasize the factors which determine intelligent selection and purchase, use, care, and repair.

5. Attention is called to the desirability of coöperation with school and institutional architects and building committees, as to plans for rooms and equipment.

VI. Organization of plans for work in the future:

It is suggested that each section chairman together with such committees as shall be appointed shall plan a program of work for the section which shall continue throughout the year. Each section shall be called upon to report plans and progress at the time of the mid-winter meeting.

Report accepted.

Voted that a copy of the program of work report be sent to state supervisors of home economics, to state home economics associations, and to state departments of education.

Voted that the expense of mimeographing the Program of Work be authorized for payment.

Committee on Committees. For committee personnel recommended and approved see pp. 598-600.

Other recommendations are as follows:

1. That the Finance Committee be asked to make a plan for the reorganization of the finances of the Association including a budget and to make a report at the mid-winter meeting.

2. That the Committee on Time and Place consider the time and place for the 1924 meeting and report on that at the Detroit meeting. That in general the Committee on Time

and Place of Meeting be appointed to report two years in advance of the time of meeting whenever it is practicable.

3. That the Program Committee for the annual meeting be made up of a chairman appointed by the Council and local representatives of the various sections of the Association. It is further recommended that the representative of a section be appointed by the section chairman, if for geographical or other reasons it is undesirable for the section chairman to serve directly. If the program committee has not received a satisfactory report on a section program seven months prior to the date of the meeting, it shall be the duty of the chairman of the program committee to appoint a local member to attend to the interests of the section. It shall be the duty of the section representative to work in close touch with the section chairman in the preparation of the section program, and to assist the chairman of the program committee with the general program. The chairman of the committee is empowered to add to the committee members representing special interests not otherwise represented. The chairman of the section shall preside at the section meetings or appoint a delegate.

4. That the Committee on Interrelations with other Organizations be asked: 1. To see that a representative is present at important meetings of societies with related interests, who will make report through the JOURNAL. 2. To recommend the appointment of a representative on joint committees with other organizations, or appointment of committees to act with other organizations. 3. To keep in touch with the policies of the American Association of University Women.

5. That the Committee on Pledge Fund for Executive Secretary be continued, with substitution of Florence Harrison for Ava Milam.

6. That the Committee on Opportunities report once in five years.

7. That the Committee on Home Economics in Business be granted their petition to be continued for another year as a committee with the right to present a program at the annual meeting.

8. That the Committee on Related Art, petitioning to form a section, be advised to organize as a committee with permission to present a program at the Chicago meeting, and that they be further advised to present again, at that time, their petition for a section.

Report accepted.

The Executive Committee presented the following recommendations which were acted upon as indicated.

1. That affiliation with the National Council of Women be referred to a committee appointed by the president and this committee report to the secretary of the Association before the next mid-year meeting. (Adopted.)

2. That the Eastern region be divided into two regions; one region to comprise New York, New Jersey, Pennsylvania, and Delaware and to be called the Eastern Region, the second to comprise the New England states and be called the New England Region. That each region have its own regional delegate and each state its representative. (Adopted.)

3. That the Council discuss advisability of the New England Region's request for permission to have associate members to take care of the homemakers section, charging these associate members only \$1.00 and not counting them in on the 100 per cent returns. (Voted that the Council do not allow or receive associate members in any state or region; that this be done as a matter of policy.)

4. That the Constitution remain as it now stands—that three-fourths of the states of a region must be affiliated before they may elect their regional representative. Also, recommended that choice of councilors from regions not yet organized be left to the new council. (Adopted.)

5. That the work of the Regional Organization Committee be continued as long as its services are required. (Adopted.)

6. That the dues be prorated quarterly in the case of any person joining the Association at large and later on in the same year joining a state association, until all the states have affiliated. (Adopted.)

7. That alternates for state council members be not allowed. (Voted that a State or Region can be represented only by its Councilor or a duly elected alternate.)

8. That the Association accept the invitation of the National Society for Vocational Education and hold the mid year meeting at the time of their annual meeting in Detroit, November 30 to December 2, 1922. (Adopted.)

9. That the Association accept the invitation of Chicago to hold the next annual meeting in Chicago at approximately the same date as the present meeting. (Adopted.)

10. That the action taken at the Chicago meeting in March, 1921, concerning a 13th issue of the JOURNAL OF HOME ECONOMICS be rescinded and that abstracts only of the addresses and the business transacted at the meetings of the Association be printed in the proceedings number of the JOURNAL. (Adopted.)

11. That the Association consider an effective budget for the income. (Council voted to go on record as favoring a budget based on a study, by the finance committee, of conditions and previous expenditures.)

12. That Miss Fisher of the JOURNAL Board be instructed to notify Mrs. Norton that the extended leave of absence requested by her had been granted. (Adopted.)

13. That the Committee on Regional Organization prepare such a statement as to make absolutely clear the procedure necessary for affiliation of regional or state organizations. (Adopted.)

14. That Miss Sweeny be made Executive Secretary of the American Home Economics Association. (Adopted.)

15. That all monies which come to any section be deposited in the hands of the treasurer and so disbursed. (Adopted.)

16. That a letter be sent to Secretary Wallace, Washington, D. C., approving the establishment of a Home Economics Bureau in the Department of Agriculture. (Adopted.)

INTERRELATIONS WITH OTHER ORGANIZATIONS

The report of Ruth Wheeler as representative of the American Home Economics Association on the Food and Nutrition Committee of the *National Child Health Council* was read by the secretary. It appeared in full in the editorial section of the September JOURNAL.

Voted to accept the invitation of the *American Association for the Advancement of Science* to have a sectional program at their meeting at Christmas time, that program to be arranged by Dr. Langworthy.

For invitation from the *National Society for Vocational Education* see Executive Committee recommendation 8, p. 588.

For affiliation with *National Council of Women* see Executive Committee recommendation 1, p. 587.

The California Home Economics Association was asked to arrange a section program with the *National Education Association*.

For relations with other organizations see Executive Committee minutes p. 597, and recommendation 4 of Committee on Committees, p. 587.

MISCELLANEOUS

Proceedings of Meeting. Voted that articles and business be abstracted to appear in a regular issue of The JOURNAL. See Executive Committee recommendation 10, p. 588.

Executive Secretary. See Executive Committee recommendation 14, p. 588, and minutes of Executive Committee, p. 597.

Secretary. Voted that the present secretary be asked to remain as secretary for a third year.

Sections. Voted that a committee be appointed to consider the voting rights in sections and report at the Detroit meeting and that the committee be asked to make recommendations, after reviewing plans of the Sections, for correlating their work with the national Association.

Program. For representation of sections see recommendation 3 of Committee on Committees, p. 587.

Voted that a letter of appreciation be sent to Miss Baldwin, Business Editor of the Journal, who was unable to attend the meeting.

BUSINESS MEETING

Meeting called to order August 3, by the president, Mary E. Sweeny. Minutes of the meeting on June 30 to July 3 at Swampscott omitted, since they were printed in the JOURNAL.

Minutes of the Council meetings of August 1 and 3 read and approved.

Report of the Treasurer read by the Secretary. Accepted. See report of Finance Committee, p. 582.

COMMITTEE REPORTS

Journal Board. Report read by Dr. Langworthy in the absence of Miss Fisher, Chairman.

It is unfortunate that the members of the Board have been so widely separated this year as to make it impossible for all members to meet during the year for the purpose of discussing the various problems that have developed since the last annual meeting. The members of the Board deeply appreciate the time and effort which Mrs. Bryan has spent in carrying on the duties of editorship during Mrs. Norton's absence.

When Mrs. Norton was granted leave of absence for the work at Constantinople College, it was with a definite understanding that she would be ready to take up her duties again this year at the beginning of July. She has not returned, however, and has asked that her leave be extended until next February as she felt that her work in Constantinople was not yet organized to the point where she could leave it to be continued to any advantage by her successor. The granting of this leave would mean that another acting Editor would have to be found to carry on the work in the meantime, unless Mrs. Bryan could be persuaded to change her plans entirely for the coming year and to continue the editorship during the

interval. Obviously it would be difficult to find another suitable person who would be willing to accept this very temporary but most responsible position, and unwise as far as the interests of the JOURNAL are concerned, as it would of course take some time for this person to become familiar with the various phases of the editorial work. Mrs. Bryan has, however, very generously consented to alter her plans and to extend her time of service to the JOURNAL until February of next year.

The members of the Board wish to present to the Council for consideration some questions which appear at this time to be of major importance in looking to the future of the JOURNAL as it should represent the interests of the Association.

It is strongly felt that the work which Keturah Baldwin has done as business editor is indispensable to the future development of the JOURNAL. Miss Baldwin has brought to her work her college training, a wide acquaintance with home economics problems, and a knowledge of related sciences. In addition to the details of the office work, she has assisted with the editorial work, and has kept in close touch with Association interests.

In considering a full time editorship, it is important that the person who assumes this responsibility should be qualified for this particular work. She should have good executive and business ability, and her work should result in a greatly increased subscription list and a growing number of advertisers who are entirely acceptable to the professional interests represented.

In all this work the editor should, of course, be very actively assisted by the associate editors and the Editorial Board. All groups in the Association have wished to see their special phase of the work given adequate attention in the JOURNAL, but no group has as yet contributed as it should in making this possible. If the JOURNAL is to develop into a publication which serves the various needs of the Association in the finest way, each member must become a subscriber and must feel personally responsible for making some worthwhile contribution. The officers must also be prepared to render as unselfish and constant service as did that pioneer group in the earlier history of the JOURNAL.

Report accepted.

Voted that the Committee for the Promotion of the Journal be asked to formulate plans to induce subscribers not now members to join the Association and those now members to subscribe for the Journal.

For further consideration of this report see Council minutes, p. 582.

Committee to Promote the Journal. Report read by Mrs. Bryan in the absence of Miss Kauffman, Chairman.

The Committee undertook the study with two definite aims in view:

I. To ascertain in what way and by what means the content of the JOURNAL OF HOME ECONOMICS might best be expanded and modified to be of interest and value to all groups in the field of home economics.

II. To study methods of publicity and advertising of the JOURNAL and its content in order to increase the subscription list and thus to secure the use of its pages for advertising purposes by business concerns.

To carry out this program a number of sub-chairmen were appointed, each one being made responsible for a group of states.

The following summary represents the important points given in the detailed reports received.

I. Content of the JOURNAL.

1. That the content of the JOURNAL be expanded to cover more adequately the entire field of home economics. That more material be published in administration and business

of the home; its economic and social aspects; its relation to community problems, and especially the relation of the children to all these phases of family life. That such topics as food and its preparation and nutrition be given less consideration to give place for the important items suggested in (1) above. That contributions on hygiene and health be sought, especially on the teaching of health as to methods of organization and use of illustrative material.

2. That many of the present articles found in the JOURNAL are too technical for the general teacher of home economics, the social worker, the homemaker, and the business manager. That too much space is given to detailed analysis. In lieu of this it is suggested that details of scientific and semi-scientific experiments be kept in the JOURNAL office and a summary only of the results and conclusions, made by some practical expert, be published in the JOURNAL from time to time.

3. That reports of actual work in the field and problems solved be published. That the Federal Board for Vocational Education be asked to advise the editor of the JOURNAL concerning pieces of work that are being conducted in the various states.

4. That material to aid teachers in the grades and secondary schools be increased.

5. The present material published for the homemaker is too highly technical. It is suggested that more material be included that will be of interest to homemakers and that such material will also serve in large measure the needs of the high school teachers whose entire scheme of instruction must be based on an analysis of the vocation of homemaking.

6. That a definite policy be adopted by the JOURNAL whereby each number shall contain a certain amount of material of interest to each of the sections of the Home Economics Association. In this way it will make a more definite and constant appeal to the different classes of home economics workers.

The Committee is aware that its recommendations cover a very wide field and that the most outstanding question raised is: "What is the proper field for the JOURNAL OF HOME ECONOMICS?"

Can it hope to cover or even touch frequently all the interests in this large and varied field of home economics? Should it attempt to do this or should it narrow its field to such objectives as:

(1) An organ of the American Home Economics Association to keep its members in touch with aims concerning the various projects in different parts of the country on which they need to be informed.

(2) An organ to disseminate subject matter in home economics.

(3) An organ for organization and methods for the vocational and other teaching interests, for extension workers, or for dietitians. Should it issue supplements or bulletins or circulars for each of these groups for which subscriptions are made or compensation otherwise received from the groups most concerned?

The committee feels, however, that the wide and varied field, set down in its recommendations is the one to be adopted at the present time as a basis for content.

II. Ways and means for increasing publicity and advertising, thereby increasing its patronage, and enlarging its content.

1. Attractive posters describing the JOURNAL placed at magazine stands where the JOURNAL is sold or in some popular store patronized by members of women's clubs.

2. That the State Home Economics Associations adopt as their project for 1922-23 the promotion of the JOURNAL.

3. That a full time editor on salary be employed to study and attempt to meet through the pages of the JOURNAL these varying needs of home economics workers, or an executive secretary employed on salary with a paid assistant, the two being jointly responsible for the publication of the JOURNAL. The executive secretary would bring from the field the needs of home economics workers and direct, in the large, the publication, while the assistant would be responsible for the details.

Report accepted.

International Home Economics. In the absence of Miss Atwater, Chairman, and Miss White, Acting Chairman, Dr. Langworthy called attention to the reports of Mrs. Strong and others (see pp. 528-534), and also gave the following report.

Brazil is interested as recently reported, but no great work is being carried on there.

Interest is shown in Cuba but again no work definitely reported; the same is true concerning South America.

Much work is being done in Japan, and it is organizing in China.

We know about the work of Mrs. Norton in Turkey.

The Philippines are doing a great deal of work, especially on canning tropical fruits.

The work of the International Office in Switzerland took a leading part in the work of home economics this summer. They arranged exhibits and helped in other ways.

The Swiss Home Economics Association requested the permission to translate the texts and charts for use in the Swiss Schools.

Miss Atwater, now in France, is making a survey of some of the home economics work being done there and has sent some interesting material.

England has a publication which corresponds to our extension papers.

Holland is also carrying on work in home economics.

Belgium has its new superior college in domestic science and from publications received in the Department of Agriculture at Washington we know that they are doing a good work.

Report accepted.

Legislative. Report read by Miss Stanley, Chairman.

The past year has been one of inaction, comparatively speaking, on the part of the legislative committee. We have kept the Fess and Smoot bills on the active working program of the various women's organizations.

When visited by members of the Women's Congressional Committee, Mr. Fess stated that he could not report this bill until after the Stirling-Towner bill has been reported from the Education Committee.

The most important work this year has been initiated by Jessie Harris who prepared a survey showing the need for more funds for vocational home economics in Texas. Similar material has been requested from all state supervisors. Copies should be sent to publicity and legislative chairmen.

We have been unable to get any reaction from Mr. Smoot in regard to the Smoot bill.

Report accepted.

Discussion from the floor as to action that should or should not be taken on the Voight Bill. Voted that the Association take no action regarding the Voight Bill.

Research. Report read by Dr. Denton, Chairman.

Progress reports from two coöperative research projects are presented before the Foods and Nutrition Section at this meeting. One of these is Emulsions in Mayonnaise, involving coöperation of home economics departments of half a dozen colleges. The other is Standardization of Household Measuring Cups, involving coöperation of a special committee of one, with the U. S. Bureau of Standards. Several new coöperative projects are being organized.

The *Sub-committee on Research in Foods and Nutrition* reports the preparation of two articles for the JOURNAL, dealing with standards for research, and research methods, suggesting research projects, and abstracting or listing unpublished theses. Prosecution of vitamin studies in relation to cooking and preserving processes, is regarded as an especially important project to be fostered by this committee, at this time.

The *Sub-committee, Research in Textiles and Clothing* has attempted to define this research field. It has been decided that educational measurements belong to educational research rather than here.

The committee has further been concerned with standards for research. Many studies of the survey type are being carried on.

The following studies have been reported this year:

Miss Weller of Minnesota and her students are working on factors which affect the strength of cotton goods. Mrs. McGowan of Teacher College continues her study of washing powders and their effect on cloth. Miss Denny of Washington and her students are working on the problem of shrinking of cotton goods, also of fading, both in the sun and by washing. Miss Balderston of Teachers College has conducted interesting studies on the washing of woollens, particularly infants' shirts. Miss Stanley of Missouri reports work on mordants. Miss O'Brien of Iowa reports effect of Bleaching on Tensile Strength of Fabrics and Effect of Reagents used in Laundering on Discoloration of White Cotton Goods, both published in JOURNAL OF HOME ECONOMICS; she also reports, as in progress, Effect of Stripping Methods on Physical Properties of Fiber and Wool Fabric, and Comparison of Rate of Removal of Vegetable and Animal Oils, in Stain Removal. Two master's theses in history of costume were done in the Household Art department of the University of California last year. A chart representing an extensive series of tests made by Miss Weirick of Sears, Roebuck, on silk stockings, is to be reproduced at cost for the benefit of those who may wish to study these tests and their results.

The *Sub-committee, Research and Extension* urges closer correlation between state and federal extension and research specialists, in the all-important matter of analyzing and resolving field problems. In at least one state a definite research project in child nutrition has been instigated by this committee, to be carried on by coöperation with extension specialists. Furthermore, the committee is making a special effort to list and classify requests for information which come in from the field, with the idea of making this list available to resident staff engaged in research, as well as to subject matter specialists.

The function of the *Sub-committee on Educational Research* is: a. To stimulate educational research. b. To keep in touch with educational research and make it available to those who can benefit from it. c. To suggest needed topics for educational research. d. To develop coöperation between the education departments and the home economics departments. e. To make known all available opportunities for educational research—fellowships, scholarships, etc. f. To stimulate and aid education departments to include the consideration of home economics problems in the philosophy of education for prospective superintendents, principals, etc.

The definite suggestions for work for the coming year are:

1. To consider the various problems of interest to educational workers. These seem to group themselves under the following topics:

a. Content of courses based upon 1. Mental, social and physiological development of the group. 2. Previous training and experience. 3. Needs of groups.

b. Methods of organizing and teaching material based upon 1. The application of the laws of learning. 2. A study of the learning difficulties.

c. Development of special methods to be used in presenting subjects in the home economics course.

d. Educational measurements.

e. School administration, involving the problems of cost, grouping of students and measures of properly estimating the value of home economics in the program.

2. Outline a few problems which might be undertaken in the field of educational research.

3. Make available information in regard to special research work in home economics which has thus far been undertaken.

4. Review the important education journals with a view to keeping teachers in touch with lines of educational research of special interest to home economics teachers.

Report accepted.

Executive Secretary Fund. Report read by Miss Johnson in the absence of Miss Matthews, Chairman.

This gave a detailed report by states and showed a total of \$4804.13 pledged of which \$3600.13 has been paid.

Report accepted.

Program of Work. Report submitted by Miss Swain. See Council minutes p. 585.

Nominating. The following nominations, previously posted, were presented by the Nominating Committee and the nominees were elected by ballot. President, Alice F. Blood; Vice-President, Anna E. Richardson; Councilor at Large, Mary E. Sweeney.

Related Arts. Report submitted by Winifred Gettemy, Chairman.

This committee makes the following recommendations:

- I. Interpretation of the term related art. Related art is the development of appreciation of art principles and the functioning of these in solving the problems of selection, arrangement, and construction, which are met in every day life.
- II. Place of related art in the curriculum. The related arts course in the Smith-Hughes High School should be part of the homemaking course. In case the courses in art are given outside the home economics department in the Smith-Hughes High School extra effort should be put forth to secure a closer relationship between the departments.
- III. Training of related arts teachers. The teacher of related arts should be a woman who has had several courses in academic art and the most of whose home economics training shall have been in the clothing and related arts group, namely, clothing, millinery, home furnishing, applied design, costume selection. The teacher-training institutions should have either a separate course for the training of teachers of related art, or should stress in their methods course the teaching of related art.
- IV. Organization of the responsibilities in homemaking, in which a working knowledge of related art is needed.
 - A. Selection of ready made hose, shoes, hats, suits, coats, dresses, underwear, accessories.
 - B. Planning of home made articles. Selection of material. Design.
 - C. Harmony and appropriateness of parts of the whole.
 - D. Personal Appearance. Hair dressing, use of cosmetics, manicuring, wearing of clothing.
 - E. Feeding the family. Serving the simple meals attractively. Setting the table. Food combinations—color, texture. Serving special occasions. Table decoration, invalid trays, attractive lunches, arrangement of children's food.

- F. The Home and its equipment. Location, selection and planning of house, decoration of house, planning grounds, selection and arrangement of furnishings.
- G. Civic beauty. Buildings, natural beauty, community festivals.
- V. Objectives.
 - A. The ability to recognize the adherence to and the deviation from the principles of design and color harmonies as expressed in related and pictorial art.
 - B. Foods. The ability to select and prepare meals from the standpoint of color and texture of foods and the suitable appointments and arrangement of the table. An appreciation of the psychological effect of well prepared meals and well set tables.
 - C. Clothing. The ability to select and design clothing suited to the individual to meet the requirements of line, proportion, texture, pattern of fabric, hygiene, appropriateness to occasion, and becomingness to wearer. An appreciation of the psychological effect of clothes and color upon the individual.
 - D. Shelter. The ability to judge and arrange for appropriate use decorative schemes, house furnishings, and color harmonies to conform to the principles of design and the theory of color. An appreciation of the necessity of elements of comfort and simplicity in the entire house to promote the welfare of the inhabitants. An appreciation of the necessity of order, sanitary conditions, and well made articles to promote the highest ideals of American citizenship.
- VI. Methods of instruction. Presentation of principles followed by application. Project method. Build up rules and principles through experience.
- VII. The committee recommends that there be a very close correlation of the related arts to the courses, foods, shelter, clothing, economics, and hygiene.

Report accepted.

Resolutions. Report read by Isabel Bevier, Chairman.

1. The American Home Economics Association acknowledges the receipt of the communication from the National Kindergarten Association and recommends the coöperation of the members of this Association in the efforts of the Kindergarten Association to establish "petition kindergarten laws."

2. The committee recommends that the Association reaffirm its interest in and its purpose to continue its efforts to secure the passage of the Fess bill and to have the bill reported out of committee before the close of the present session.

3. Whereas the home economics association realizes the need of a research program in the further development of home economics and knows the necessity for financial aid for such a program, the Association urges the passage of the Smoot bill or that the provisions of the Smoot bill be embodied as an amendment of the Purnell bill.

4. The American Home Economics Association notes with regret that three of the women's colleges of the southern section have given up the work in home economics in their respective institutions. The Association earnestly hopes that the authorities in those institutions will continue the effort to develop in that region such phases of home economics as are adapted to their traditions and needs.

5. The committee is at a loss to find words to express full appreciation of the untiring efforts expended in the generous hospitality accorded the Association since arriving in Portland. Our gratitude is extended to the following organizations and individuals:

In Portland—The Presidents' Council; Progressive Business Men's Club; Chamber of Commerce; The Portland School Board; The Home Economics Association of Portland; the Press.

In Corvallis—The authorities of the Oregon State Agricultural College; the faculty; students; alumnae and friends of the institution; Corvallis Women's Club; Corvallis Chamber of Commerce; the Women's Auxilliary of the Chamber of Commerce; the Press.

6. In this connection the committee recommends a resolution of thanks to Miss Nina Streeter who had the difficult and thankless task of arranging transportation facilities for the trip.

7. The committee feels that the Association wishes to record an expression of appreciation of the unusual service rendered by Mrs. Mary de Garmo Bryan in the responsibilities that have developed upon her as acting editor of the JOURNAL.

8. The Association expresses its appreciation of the invaluable services rendered through many years by the Office of Home Economics under the able leadership of Dr. Langworthy. His sympathy, interest, and coöperation have contributed in no small degree to the success of the organization.

9. The Association notes with pleasure the correlation of the work of home economics at Drexel Institute and the University of Pennsylvania.

10. The Association learns with regret of the serious and long-continued illness of one of its most competent and faithful workers in the pioneer days, Miss Alice Ravenhill, and sends to her this expression of sympathy.

11. The committee is shocked to receive from Miss Gunther a telegram announcing the death of Mrs. Annie Dewey "Our honored, beloved, home economics leader."

Those who know the work of the Deweys in the Lake Placid Conference and Mrs. Dewey's continued interest in the home economics work will appreciate more fully the loss, but the entire association will wish to record their appreciation, and the committee recommends a resolution conveying our sympathy be sent to Mr. Dewey and the son, Godfrey Dewey.

Report accepted, and Secretary instructed to send a telegram to Mr. Dewey.*

COMMUNICATIONS

Miss Bevier read a letter from the Near East Relief Headquarters of appeal for financial aid in the work of the Near East Relief. A sum of \$60.00 was raised and forwarded for this Fund.

A message was read by the Chairman from Alice Ravenhill with greetings from Miss Ravenhill and wishes for a successful convention.

Voted that the Association send a telegram to Miss Ravenhill.*

AMENDMENTS

A vote was taken on the proposed changes in the constitution, previously submitted by mail, with the action noted after each.

CONSTITUTION

Article IV, Sec. 6, (3). *Suggested change*—regional councilors elected by their regions to serve for two years. (Adopted.)

BY-LAWS

Article I, Paragraph 2. *Suggested change*—Add "Nominations may be made from the floor." (Lost.)

Article II, Sec. III, (3). *Suggested change*—It shall elect from its membership two members who, with the president, the vice-presidents, the secretary, the office secretary "ex officio,"

* Acknowledged.

the treasurer, the editor of the JOURNAL, and three regional councilors designated by the Council, shall form the executive committee. (Adopted.)

Article III, Sec. II, (1), Paragraph 1. *Suggested change*—Omit sentence, "Such affiliated societies must have within their own membership at least ten members of the American Home Economics Association." (Adopted.)

(1), Paragraph 3. *Suggested change*—Omit this paragraph. (Adopted.)

(2) *Suggested change*—Add, "These associations shall pay an annual fee of \$5.00 to the treasurer of the National Association." (Adopted.)

Article V, Sec. 2. *Suggested change*—The finance committee shall present to the executive committee by Dec. 1st of each year, a budget for the next fiscal year and, on approval of the executive committee, shall authorize the treasurer to make payment under the budget. The fiscal year shall be the calendar year, January 1st to December 31st. The finance committee shall receive, etc. (rest of paragraph same as original). (Lost.)

EXECUTIVE COMMITTEE MEETINGS

The results of the deliberations of this body are set forth, in the main, in the recommendations presented to the Council, see p. 587.

The committee authorized the payment of part of Mrs. Bryan's expenses not included in the Journal budget, and also the expenses incurred by Miss Streeter in arranging for the special train.

Voted to ask the Home Economics Association of Greater New York to finance our part in the Public Health Exhibit in Brooklyn. In case of excessive cost it should be reported to the Finance Committee.

A letter of inquiry was received from the Western Arts Association in regard to joint meetings with them. Committee decided to request that Council ask the State Association of Missouri to handle it until the regional organization has been completed; this information to be incorporated in the reply to the Western Arts Association.

The Association was asked in a letter from the General Federation of Women's Clubs to have a representative on the Advisory Council for the Motion Picture Division of the General Federation. The letter was referred to the Committee on Interrelations with the name of Miss Jessie Winchell proposed as the member of the Committee.

The constitution of the Southern Region was discussed and decision made that no action is necessary so long as it does not conflict with the constitution of the A. H. E. A.

It was decided that the work of the executive secretary for the present should be the completion of the affiliation of the states and a unifying of the organization.

Miss Milam reported that \$60.00 had been collected for Miss Ravenhill.

Voted that the expenses incurred by the program committee be paid.

Voted that Miss Sweeny, Miss Cooper, and other officers of the executive committee be reimbursed for incidental expenses of the convention.

Other matters discussed but with no action taken: Fiscal year, treasurer, organization of Richards Memorial Fund Trustees, a letter suggesting the making of a film for the Association, to be used by the general public.

OFFICERS AND COMMITTEES

OFFICERS OF THE ASSOCIATION

President, Alice F. Blood
Vice-Presidents
 Isabel Ely Lord
 Katharine Blunt
 Anna Richardson

Secretary, Lenna F. Cooper
Treasurer, H. Gale Turpin
Executive Secretary, Mary E. Sweeny
Office Secretary, Keturah Baldwin

OFFICERS OF SECTIONS

Textile
Chairman, Ruth O'Brien
Secretary, Rose Shonka
Treasurer, Beulah Blackmore

Institution Economics
Chairman, Sibylla Hadwen
Secretary, Emma Knight

Home Economics Extension
Chairman, Nina B. Crigler
Secretary, Addie D. Root

Home Economics Education
Chairman, Ellen A. Reynolds
Secretary, Jenny H. Snow

Food and Nutrition

Chairman, Mrs. Jessamine Chapman Williams
Secretary, Frances L. Swain

COMMITTEES SERVING AT ANNUAL MEETING

Nominating

Florence Harrison }
 Essie Elliott } *Appointed by Council*
 Agnes Donham, Eastern Region
 Beulah Coon, West Central Region
 Cleora Helbing, Southern Region
 Mrs. Jessamine C. Williams, Pacific Region

Resolutions Committee

Isabel Bevier, *Chairman*
 Rachel Colwell
 Mrs. Nina Badenock
 Mrs. Myrtle Cole
 May Hoddon

Program of Work

Frances Swain, *Chairman*
 Ruth Dickey
 Anna Richardson
 Mary DeGarmo Bryan
 Edna Walls
 Maud Wilson
 Margaret Sawyer
 Frances Kelley

On Committees

Alice Blood, *Chairman*
 Jenny Snow
 Rena Maycock
 C. F. Langworthy
 Lucy W. Wade
 Effie Raitt
 Cleora Helbing

STANDING COMMITTEES

Journal Board

Katharine Fisher, *Chairman*
 Mary De Garmo Bryan, *Editor*
 Keturah E. Baldwin, *Business Editor*
 Mary Hinman Abel
 C. F. Langworthy
 Grace G. Denny
 Katharine Blunt

Executive Committee

Officers of the Association
 Editor of the JOURNAL
 Mary Sweeny }
 Margaret Sawyer } *Councilors at large*
 Gladys Branegan }
 Edith Thomas } *Regional Councilors*
 Jenny Snow }

Richards Memorial Fund Trustees

Martha Van Rensselaer	} Terms expire January 1, 1923
Anna Barrows	
Bertha M. Terrill	
Mrs. Mary H. Abel	} Terms expire January 1, 1924
Isabel Bevier	
Robert H. Richards	
Cora Winchell	
Isabel Ely Lord	} Terms expire January 1, 1925
Emeline Whitcomb	
Mary Gearing	
Mary Vail	
Mabel Wellman	} Terms expire January 1, 1926
Agnes Harris	
Jenny Snow	
Edna White	

Finance

S. Agnes Donham, *Chairman*
H. Gale Turpin
Mrs. Marion Cole
Secretary-Treasurer of R.M.F. Fund
Editor of JOURNAL
Executive Secretary
Chairman Executive Secretary Fund

Legislative

Louise Stanley, *Chairman*
Jessie Harris
Jessie Whitacre
Edna White
Isabel Bevier
Frances Zuill

International Home Economics

Helen Atwater, *Chairman*
Edna White
Mrs. Ann Gilchrist Strong
Mrs. Alice Norton
Ava B. Milam
Emma Gunther

Time and Place of Meeting

Cleora Helbing, *Chairman*
Stella Palmer
Mate Giddings

Program

Katharine Blunt, *Chairman for Chicago Meeting*
Edna White, *Chairman for Detroit Meeting*

Interrelations with other Organizations

Margaret Sawyer, *Chairman*
Editor of the JOURNAL
Antoinette Roof
Grace MacLeod
Adelaide Baylor
Lydia Roberts
Hannah Wessling
Ruth Van Deman

Research

Minna Denton, *Chairman*
Grace Denny
Florence Nesbitt
Hildegard Kneeland
Nina B. Crigler
Agnes Fay Morgan
Anna E. Richardson
Margaret Proctor

Press and Publicity

Nina Streeter, *Chairman*
Lillian Tingle
Helen Louise Johnson
Agnes Craig
Gertrude Lane
Martha Van Rensselaer
Marie Sellers
Amy Armistead
Susie V. Powell
Editor of the JOURNAL

Standards of H. E. in Colleges

Helen Atwater, *Chairman*

Regional Organization

Edith Thomas, *Chairman*
Agnes Ellen Harris
Gladys Branegan
Anna Kloss
Mary Matthews
Maude Murchie

Executive Secretary Fund

Mary L. Matthews, *Chairman*

SPECIAL COMMITTEES

Membership

Mrs. O. E. Osborn, *Chairman*
Presidents of state organizations or their appointees

Voting Rights in Sections

Frances Kelley, *Chairman*

GROUP COMMITTEES

*Social Welfare*Lydia Roberts, *Chairman**Homemakers*

Mrs. Mildred Weigley Wood

*Home Economics in Business*Mary E. Keown, *Chairman**Related Art*Winnifred Gettemy, *Chairman*

The Mid-year Meeting of the American Home Economics Association will be held in Detroit, November 30-December 2, in connection with the National Society for Vocational Education. Programs will be mailed to all members.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

MARY DE GARMO BRYAN, *Editor*KETURAH E. BALDWIN, *Business Editor*

MRS. MARY H. AREL

C. F. LANGWORTHY

Editorial Board

KATHARINE FISHER

GRACE G. DENNY

KATHARINE BLUNT

*Editor of "The Question Box," AMY DANIELS**Associate Editors*DAY MONROE, *News*EDITH BARBER AND MILDRED WEIGLEY WOOD, *Social Welfare and the Home*FLORENCE WARD, *Extension*SYBIL WOODRUFF, *Foods and Nutrition*CORR WINCHELL AND EMMA CONLEY, *Education*RUTH O'BRIEN, *Textiles*MABEL LITTLE, *Institution Economics*ELIZABETH MILLER KOCH, *Bibliography**Collaborators—The Officers, Members of the Council, and Advisors*

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THE PRESENT STATUS OF EXPERIMENTAL RICKETS

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In the year 1650 Francis Glisson published the first adequate description of the disease which is still commonly known as rickets (1). The condition had appeared in the counties of Dorset and Somerset in England about thirty years previous to his writing and had been called "rickets" by the country people. They derived this word from the old English verb "wrikken," which means to bend or twist. Even though the name was very expressive of the bow legs and other deformities which follow rickets, the term did not satisfy Glisson. He christened it "rachitis," a word which he derived from the Greek words for spinal disease. Rachitis is the name which many doctors use for the disease today.

As a matter of fact rickets was really no new disease in the 17th century. We know that children must have had it in England before the Romans came. One skull of a child who lived in the bronze age has been found which shows definite signs of rickets.

Rickets can appear in infants as early as the third month of life, but there is at present no good evidence that they are ever born with it. The disease usually manifests itself at any time from the sixth to the twenty-fourth month. Although it is usually a disease of infancy there are many cases where "late rickets" attacks older children and even young adults. Almost all premature children develop the disease. Children with rickets are usually fairly well grown and appear to be fairly well nourished.

Rickets is a disease which affects the entire body although the most noticeable signs of it are seen in the bones. At the beginning of the disease the children are usually constipated. They are restless and irritable and their sleep is troubled. Frequently a rachitic child rolls its head about on its pillow until the hair is worn off from the back of its head. The muscles are lax, the tendons and ligaments may become elongated. Because of this as well as from the softening of the bones the children do not walk or stand at the proper time. The muscles of the intestines are affected as well as those of the legs and arms. Because of the weakness of these and the muscles of the abdomen, pot belly develops.

As the disease goes on the deformities of the bones begin to show. The first of these to appear is the "rickety rosary," or a line of knobs on the sides of the chest where the bone of the ribs joins the cartilage. The walls of the chest are drawn inward every time the child breathes, and grooves are formed on either side along the line of attachment of the diaphragm. The chest becomes compressed from side to side and pigeon breast deformities develop.

Bosses of new bone are formed on the sides and front of the skull and the head acquires a square shape. The ends of the long bones of the extremities become enlarged so that there is a swelling of the wrists and ankles. The legs become knock-kneed or bowed. The bones of the arms bend. Curvatures of all sorts appear in the spine.

Some children show very severe anemia during the course of the disease, and some manifest extreme nervousness, even convulsions. Rickets may be fatal by itself, but usually the child dies from some complication (2). The disease contributes very markedly to infant mortality because it renders infants suffering from it extremely susceptible to other diseases and weakens their resistance to any disease they may acquire.

Children with rickets are constant sufferers from colds and bronchitis and life is frequently destroyed by pneumonia, which is the result of these conditions. The severity of the complications is partly because various organs of the body are interfered with by the bony deformities and partly because of the weakness of the organs themselves. Finally rickets interferes very seriously with the growth of the child and children may actually become dwarfs because of it.

EXPERIMENTAL RICKETS

One finds many references in the literature of the past few years to attempts to produce in animals by various means the disease commonly known as rickets. Although much research has been directed toward the solution of this problem, the experimental diets employed were not so planned that the results could be accurately interpreted. A single example of the type of experiment planned with this end in view will serve to illustrate the point at hand. Dibbelt (3) sought to produce rickets in dogs by feeding them a low calcium diet composed of horse meat, carbohydrate (rice starch), and sodium chloride. This diet is low in calcium, to be sure, but there are several other factors which contribute to making it a poor diet. It is low in all three of the well known vitamins, viz., fat-soluble A, water-soluble B, and water-soluble C, and also in the new vitamin which will be discussed later. Its inorganic content is not so adjusted that the results could be said to turn only on the shortage of calcium. Even if the dogs had developed rickets one could not have said that the condition was due to the absence of calcium, although this would have been the interpretation put upon the experiment.

It will be recalled that it is only since November, 1915, when McCollum and Davis published their papers on "The Essential Factors in the Diet" and "The Dietary Deficiencies of Rice" that it has been possible to plan an adequate diet for the rat and know why it was adequate (4).

The importance of the aforementioned papers in this discussion is that prior to their publication it was not possible to name the different factors necessary to make a diet physiologically complete. They paved the way for the "biological analysis of foodstuffs", the results of which have enabled one to inspect a mixture and predict its shortcomings, and the additions necessary to induce growth. In other words, McCollum and Davis demonstrated clearly that the "chemical analysis of foodstuffs" must be replaced by the "biological analysis" if progress in nutrition was to be made.

One must bear in mind that in experimental work of this kind a working hypothesis is necessary, as it aids in drawing deductions from data with an understanding which is not otherwise possible. If, however, new dietary essentials are to be discovered one must deviate from the established formula and inquire whether under any dietary conditions the first hypothesis breaks down. If the hypothesis does not hold under the new dietary conditions, wherein do these differ from the conditions under which the hypothesis did hold? It is by some such procedure that new discoveries are made.

Prior to 1918 Dr. McCollum and I had seen gross changes in the bones of many of our rats, which were very suggestive of rickets. Realizing that gross changes were not sufficient to determine the presence or absence of rickets we merely kept track of the various diets upon which these changes occurred. Not knowing what actors were involved in the causation of rickets and not knowing which of the changes were rickets, it was deemed inadvisable to even venture a guess as to the etiology of this disease.

When the co-operative study with Dr. Park and Dr. Shipley was begun, they found that many of the bones presented the typical histopathological picture of rickets, whereas some of the bones showed rickets-like changes, and other bones showed conditions which were in no way related to rickets. Typical rickets was found in animals fed diets which varied greatly in their composition. It seemed at one time almost impossible to run a connecting thread through the various diets upon which rickets did develop. The question may be asked, what are the characteristics of a rachitic bone? It is impossible in most instances to tell a rachitic bone except from histopathological sections. A rachitic bone has the following properties: (a) calcification of the provisional zone of cartilage does not occur; (b) cartilage cells persist in the shaft below the normal epiphyseal line; (c) there is irregular invasion of the cartilage by blood vessels and connective tissue; (d) newly formed preosseous tissue remains uncalcified and is produced in abnormal amount—the so called osteoid tissue; (e) there is present the rachitic metaphysis which is composed of blood vessels, isolated masses and tongues of cartilage, connective tissue, and osteoid (5).

The degree to which a rachitic bone will show all of these characteristics depends upon numerous factors. If the rickets-producing diet is one on which the animals do not grow to any extent the condition is less marked, whereas on a diet which will induce some growth the picture may be exaggerated. One of the greatest problems which had to be met in investigating the etiology of rickets was the ruling out of diets upon which the animals did not all perform alike. If the diet used induced very little growth in the animals many of the bones presented only a mild grade of rickets, although some would show very pronounced rickets; in other words the results were inconstant. When one is working with diets which do not induce much growth but always early decline, there is a great tendency to cannibalism. This is especially true of diets low in fat-soluble A. After the eyes have become sore and the animal debilitated a rat is often destroyed by his companions. This was a most disturbing factor in our earlier studies on experimental rickets.

Mellanby was the first to associate the group of fats rich in fat-soluble A with the prevention of rickets (6). His work focused the attention upon the problem as to whether fat-soluble A or some other factor associated with certain fats was essential for bone growth. Mellanby worked with dogs. Whereas some of his data were suggestive that fat-soluble A was essential for bone growth, some of his results indicated that perhaps another factor was needed which was not identical with fat-soluble A. He did not prove or disprove this point. This is true for the reason that in many cases Mellanby did not appreciate the importance of the calcium phosphate ratio in the study of rickets. Thus he added meat to diets low in phosphorus and prevented the animals from having rickets by thus raising the phosphorus, but he attributed the prevention to the fat which he had added (7). Many of Mellanby's deductions were apparently drawn from X-ray photographs instead of from histopathological studies. As has been pointed out, the diagnosis of rickets can be made only from the latter studies, since both the X-ray pictures and the clinical appearance of rickets may result from an osteoporosis or sclerosis, which is in no way related to rickets in children (5).

Since most if not all rachitic bones show great deformity, many investigators were inclined to the view that the diets planned to induce rickets in animals must be low in calcium. Since an animal does not grow to any extent in the absence of calcium, animals fed such diets did not always show typical rickets. Many animals fed diets very low in fat-soluble A but containing an abundance of calcium showed typical rickets, whereas some presented rickets-like conditions. Since bones are composed of both calcium and phosphorus the question of the relation of phosphorus to bone growth soon became appreciated. One of the greatest advances in the study of this most interesting condition was the demonstration by Sherman and Pappenheimer (8) and by ourselves (9) that diets containing calcium and phosphorus in certain ratios even in the absence of fat-soluble A do not cause rickets to develop. The bones are not normal, since a condition of osteoporosis results. This point has been discussed in detail elsewhere (9).

It has been known for about a year and a half that the main factors involved in the etiology of rickets were faulty relations between the calcium and phosphorus—either a low calcium and a high phosphorus or a high calcium and a low phosphorus (10)—and the shortage of an organic factor associated with certain fats (11). It has also been known that if the three factors are lacking, rickets will not develop or is very irregular in its development. The question which could not be definitely proved or disproved was whether or not this organic factor was the same as fat-soluble A or whether it was a different factor having a similar distribution. We were in possession of data secured with our "line test" diet which has been discussed elsewhere (12) that butter fat was very inferior to cod-liver oil in causing the deposition of calcium salts in a metaphysis free from calcium. This fact in itself suggested the existence of a new substance but still did not rule out the possibility of merely a difference in concentration of fat-soluble A. In other words, did cod-liver oil only contain much more fat-soluble A than butter fat? To quote Pasteur—"In experimental science it is always a mistake not to doubt when the facts do not compel you to affirm."

It should be pointed out that in diets where the calcium and phosphorus were furnished in about the optimal amounts as far as we know them for the rat (calcium 0.64 gm. and phosphorus 0.41 gm. per 100 gms. of food) we could not detect any difference between the potency of cod-liver oil and butter fat. It was only when one or the other of these elements was low that cod-liver oil was more effective than butter fat in causing a more efficient utilization of the element available. We were convinced that existing methods were not sufficiently critical to solve this perplexing problem. We sought, therefore, to attack the problem from various angles and see whether or not we could answer the question beyond doubt.

EXPERIMENTAL PROCEDURE

Making use of our experience with different types of diets in relation to rickets as well as ophthalmia we formulated a plan which involved a comparison of a selected list of fats in respect to three kinds of effects in nutrition. It may be stated again that we knew from previous experience that cod-liver oil was much more effective than butter fat in promoting a better utilization of a low calcium supply. This observation was one of the reasons for suspecting that cod-liver oil furnished a factor in abundance which butter fat contained only in small amounts.

Our plan of testing a series of fats consisted of the following:

1. We tested cod-liver oil, butter fat, shark-liver oil, burbot-liver oil, and several vegetable oils including coconut, maize, olive, sesame, and cottonseed, for their potency in causing the cure of ophthalmia due to lack of fat-soluble A.

2. We made up a diet which was so *low* in calcium that this was the limiting factor. It contained sufficient fat-soluble A to prevent ophthalmia. The problem at hand was to see which fat contained some substance which would make for greater efficiency in the utilization of calcium than could otherwise be effected in its absence.

3. We prepared animals for our "line test" by feeding a diet containing a *great* excess of calcium, and then tested out these different fats to discover their relative values for inducing the deposition of the line of calcium salts in rachitic bones.

When little rats are placed upon the following diet (rolled oats 40.0 per cent, casein 5.0 per cent, NaCl 1.0 per cent, CaCO_3 1.5 per cent, and dextrin 52.5 per cent) they soon show signs of incipient xerophthalmia. As soon as the lids were badly swollen the different fats were added to the diet. We added liberal amounts of the fats to be tested, since we did not want to complicate our data by quantitative testing of fats at this time. It was found that cod-liver oil, butter fat, shark-liver oil, or burbot-liver oil, cured xerophthalmia when fed at two or three per cent of the diet for a few days. We did not find that any of the vegetable oils tested cured xerophthalmia after it had developed. It may be stated that in other experiments a few of these oils may have delayed the onset when fed in liberal amounts (8 to 20 per cent) from the beginning of the experiment. Let it be noted that coconut oil does not prevent or cure xerophthalmia even when fed at 15 per cent of the diet.

Hopkins was the first to point out that oxidation destroys fat-soluble A (13). He showed that if oxygen is allowed to pass through heated butter fat the fat-soluble vitamin is destroyed. With this treatment butter fat loses its power of inducing growth or of curing xerophthalmia due to lack of this factor.

Since we had not found butter fat very potent in the prevention of rickets under specific dietary conditions or in causing calcium deposition, we sought to treat cod-liver oil so as to destroy fat-soluble A. When a stream of air bubbles at the temperature of boiling water was passed through cod-liver oil for from 12 to 20 hours it no longer contained sufficient fat-soluble A when fed at 2 per cent of the diet to cure ophthalmia. The significance of these results in connection with the problem of a special calcium-depositing vitamin will be discussed later.

We had conducted many experiments which showed clearly that a diet may be so deficient in calcium as to prevent growth in young rats (14). Butter fat was not nearly so potent as cod-liver oil in promoting growth under these conditions. We selected a diet which was low in calcium and low in fat-soluble A, although the latter factor was not so deficient as to cause ophthalmia to develop. It contained about the optimal amount of phosphorus as far as we have determined it for the rat, and our problem was to see to what extent, if any, the different fats increased the efficiency of the animals in utilizing the small amount of calcium at their disposal. The diet selected had the following percentage composition: whole wheat 25.0; whole maize 19.5; polished rice 9.5; rolled oats 9.5; peas 9.5; navy beans 9.5; whole milk powder 5.0; casein 10.0; NaCl 1.0; dextrin 1.5. This food mixture was fed with each of the following fats: cod-liver oil 1 per cent, shark-liver oil 3 per cent,

coconut oil 10 per cent, cottonseed oil 10 per cent, olive oil 10 per cent, and butter fat 10 per cent. It was very apparent from our records that when cod-liver oil, shark-liver oil, or butter fat was fed, growth proceeded in a fairly satisfactory manner. Butter fat was not, however, the equivalent of the fish oils in this experiment. Coconut oil was the only vegetable oil which increased the efficiency of animals in utilizing their low calcium supply (15). It should be recalled that coconut oil did not prevent ophthalmia. These data show clearly a very remarkable property of certain fats which makes them of extraordinary importance in relation to calcium metabolism.

Although the data discussed above were very suggestive that there was another factor aside from fat-soluble A playing a rôle in calcium metabolism, it by no means proved it. We therefore supplemented the data obtained with these tests with observations on the effects of the several fats on the healing of rickets. For this purpose we used the technique which we have called the "line test." The diet used for this purpose consisted of wheat 33.0, maize 33.0, gelatin 15.0, wheat gluten 15.0, NaCl 1.0, and CaCO_3 3.0. The proteins of this diet are of good quality and are abundant (about 33 per cent of the food mixture). The amount of phosphorus in the mixture is distinctly below the needs of the growing rat for this element. One hundred grams of this mixture contained about 0.3019 grams of phosphorus. Our observations indicate that the optimal amount of phosphorus in the diet of the growing rat is not less than 0.4146 per cent. It may be considerably higher. The calcium content of this food mixture is about 1.221 grams—approximately double that required for optimal growth and function. Although the diet contains an excessive amount of calcium no deposition of calcium salts takes place. The content of fat-soluble A is below the optimal, but suffices to prevent the development of xerophthalmia.

After animals have been fed on this diet for about 30 days one notices certain peculiarities in their movement. The gait is rather unsteady and the hind quarters waver from side to side. When they move off rapidly they hop, usually favoring one hind leg. When they exhibit these symptoms we have found it safe to rely on it that they will show the histological picture which is essential for the conduct of the test. When a group of rats are ready to be used for the test, some of them are given the substance which we desire to study in their food and the rest serve as control animals and continue to receive the diet unchanged.

When animals were suitably prepared for the "line test" different groups were fed the following list of oils: shark-liver oil, cod-liver oil, burbot-liver oil (a fish oil), butter fat, coconut oil, olive oil, maize oil, and sesame oil. The test animals and the controls were killed and autopsied at the designated time. It has been our custom to examine the distal end of the left femur and the proximal end of the left tibia for the reformation of the provisional zone of calcification.

The bones of animals on this diet are very short, and the ends much enlarged. On section the cartilage of the epiphysis is irregular in depth and the epiphysis is separated from the diaphysis by a zone of white tissue (the metaphysis) which may be about 0.5 cm. deep. In the bones of the control animals or the animals which give a negative "line test" there is no calcification of the epiphyseal cartilage and little if any in the metaphysis. The shaft is incompletely calcified. These bones have been completely described in another place (12). Rats which give a positive "line test" differ from the controls in having a broad, linear deposit of calcium salts on the metaphyseal side of the epiphyseal cartilage. The band, which may not be complete, is separated from the shaft of the bone by the depth of the metaphysis and from the nucleus seen on the freshly cut surface of an untreated bone as a yellow line which marks the epiphyseal border of the metaphysis. The deposit is blackened by silver nitrate in fresh or fixed gross specimens. It appears like a cross-section of a black honeycomb when it is examined with a binocular microscope. The deposit is in the proliferative zone of the cartilage. It may extend completely across the bone or may be interrupted or fragmentary according to the activity of the calcium-depositing substance. It is stained brown by silver nitrate and an intense blue by hematoxylin. It is separated from the calcified trabeculae of the shaft by the width of the metaphysis.

The several oils studied are listed in Table I. The amounts fed, the number of days administered, the length of the preliminary period, the number of animals tested, and the results of the test, are given. Since starvation causes the deposition of calcium salts in the bones under the conditions of this test, we always kept food consumption records in making all of these tests (12).

It will be seen from Table I that cod-liver oil, shark-liver oil, and burbot-liver oil, were highly effective in moderate doses in causing the deposition of calcium in the bones of rachitic animals. Butter fat was effective when fed in large amounts, but it was necessary to extend the time of administration to 14 days in order to obtain even a faint calcification on the bones. Coconut oil when fed at 20 per cent of the diet

for 15 days caused the deposition of a small amount of calcium salts in the bones. Maize oil, olive oil, cottonseed oil, and sesame oil, were likewise fed at 20 per cent for 14 to 15 days, but in no case was there any tendency to the deposition of calcium salts.

It will be seen from the table that samples of cod-liver oil which had been oxidized for four, twelve, and twenty hours respectively, were tested for their calcium-depositing power. The sample oxidized four hours still cured ophthalmia and also gave a positive line test. *However, those samples oxidized for twelve and twenty hours showed the potency in a degree apparently comparable with similar amounts of untreated samples, notwithstanding the fact that they had lost their power to cure xerophthalmia.* Oxidation, as pointed out by Hopkins (13), destroys fat-soluble A, but oxidation sufficient to destroy fat-soluble A did not destroy the other factor which plays an important rôle in bone growth. Coconut oil although lacking in fat-soluble A, since it will neither cure nor prevent ophthalmia, did cause a faint line of calcium deposition in the bones of the animals, thereby demonstrating that it contains at least small amounts of the calcium depositing vitamin.

TABLE I

KIND OF OIL	PER CENT	NUM- BER OF DAYS IN PRE- PARA- TORY PERIOD	NUM- BER OF DAYS FAT WAS GIVEN	NUM- BER OF ANIMALS	RESULTS*
Cod-liver oil	2.0	28	11	3	Healing rickets
Cod-liver oil	0.2	70	5	1	Severe rickets, few fragments of calcium in the cartilage
Cod-liver oil	0.4	70	5	1	Severe rickets, no healing
Cod-liver oil	0.6	70	5	1	Beginning healing of rickets
Cod-liver oil (oxi- dized 4 hours)	2.0	25	6	3	Healing rickets
Cod-liver oil (oxi- dized 12 hours)	2.0	28	11	3	Healing rickets
Cod-liver oil (oxi- dized 20 hours)	2.0	29	10	3	Healing rickets
Butter fat	30.0	32	14	2	Beginning healing
Shark-liver oil	2.0	34	11	3	Marked healing
Burbot-liver oil	2.0	30	10	4	Healing well on
Coconut oil	20.0	24	15	5	Very slight evidences of healing
Maize oil	20.0	34	15	5	Severe rickets, no healing
Olive oil	20.0	34	15	5	Severe rickets, no healing
Cottonseed oil	20.0	29	15	5	Severe rickets, no healing
Sesame oil	20.0	24	15	5	Severe rickets, no healing

* For a detailed discussion of factors bearing on the conduct of this "line test" the reader is referred to Jour. Biol. Chem., 1922, liii, 313.

The evidence from this series of experiments demonstrates the existence of a vitamin which is apparently abundant in certain fish oils, notably cod-liver oil, and present to a lesser extent in butter fat and coconut oil among the foods examined. Butter fat is a much better source of the fat-soluble A than it is of the substance which regulates calcium metabolism. Our results are in harmony with those of Mellanby, in that they show that coconut oil has an antirachitic effect (7). One feels after studying Mellanby's data that he apparently did not appreciate the importance of the calcium and phosphorus in his experimental diets nor did he avail himself of the ophthalmia test in parallel with experimental rickets. Many of his apparently discordant results can probably be explained on the basis of these facts rather than in the content of his diets in the calcium depositing vitamin.

The question naturally arises as to what this new substance does in connection with bone growth. As has been pointed out, "the function of this organic factor appears to be to activate and coordinate cellular function. It appears to raise the efficiency of the organism and permits it to put into successful operation defense mechanisms which without it would have been ineffectual. It does not meet the defects in the inorganic composition of the diet directly by supplying to the body either calcium or phosphorus. It apparently meets them indirectly by so raising the potential of the cell as to secure the most efficient utilization possible of those substances available which are directly or indirectly concerned with ossification and calcification. It seems to bring about normal ossification and calcification or else the closest approximation to normal ossification and calcification compatible with the marked variations from the optimal in the amounts of certain of the inorganic constituents of the diet. It does not regulate the inorganic metabolism of the body but permits the body's own regulatory mechanisms to operate with increased efficiency and economy" (16).

The whole story of rickets cannot be told in this brief paper. The relation of sunlight and ultra violet light to the healing of rickets is a phenomenon which we do not understand. The work of foreign investigators, notably Raczynski, Sacks, Riedel, Putzig, and Huldschinski, as well as of Hess and Unger, Howland and Kramer, and ourselves in this country, show clearly that sunlight and ultra violet light exert a protective action in the prevention or healing of rickets. We know that when children with rickets are exposed to sunlight or to ultra violet light, and with no change in their diet, rickets tends to heal. We know that

when rats were fed a rachitic diet and exposed to the sunlight for four hours a day for 64 days rickets did not develop; rickets did develop in the control animals kept in the laboratory. We cannot logically conclude that sunlight, important as it is, can take the place of good nutrition. For a detailed account of the relation of sunlight, exercise, and hygienic conditions in relation to rickets the reader is referred to various papers in the bibliography (17).

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NATIVE DIETARY ON NIUÉ ISLAND

ANNIE B. JUNIPER

Those engaged in home economics may be interested in hearing of foods and culinary processes on a primitive isle.

Away off the tourist tract in the South Pacific, 380 miles south of Samoa, and some 250 miles east of the Tongan group, lies a small island called Niué, 40 miles in circumference. In days gone by it was not safe for a white man to land there. Captain Cook attempted it, but received such a hostile reception from this independent people that he quickly left and named it Savage Island. Today there are about 4000 natives, and thirty white folk.

There is very little communication with the outside world. An erratic bi-monthly cargo service from New Zealand, a sailing craft of a hundred tons, brings food and other stores over the intervening 1700 miles. During the seven months I spent there, no passenger boat called, nor is a boat usually seen during the hurricane season, December to April.

The natives of this island are still unspoilt by tourists. They are all dark-skinned; some with straight, others with curly black hair. They are of average height, well proportioned, slight and muscular rather than fat. Many remind one of gypsies seen in England. They are not overburdened with nerves; children and adults bear pain stoically. As a whole they are not very thoughtful for their children or old folk; indeed they are themselves but children in many ways.

As regards natural products, there are no cattle on the island, therefore no fresh beef or milk. Fowls abound, but are of a poor strain. They run wild, and eggs are very difficult to obtain as the hens lay them in the bush and raise continuous families of chicks. Pigs, wild and tame, are found. Both kinds hunt their food, though the latter are fed some coconut and bananas. They are small animals, and the pork is sweet. They are usually killed for some function, such as a feast.

As there is no stream, river, or lake on Niué, only sea fish are available. The coast is of treacherous coral, against which the Pacific rollers thunder continuously, and all fishing is done by natives from homemade canoes with out-riggers. There are flying fish, gorgeous colored blue, pink, and red fish of different kinds which the natives like. There are also small land crabs and *uga* (pronounced "unga"), which are good.

The island consists of ravines, pinnacles and boulders of coral, sharp and cutting, with but few inches of soil, at most from one to two feet.

The coconut palm and bananas, over a dozen varieties, flourish in abundance the year round; and in lesser numbers and at particular seasons, the mango, breadfruit, limes, oranges, lemons, guava, passion fruit, grenadilla, pineapple, paw-paw, custard apple, and small Italian tomatoes and cucumbers yield food. There are no vegetable gardens as we know them, and vegetables are scarce. The *taro* is the most largely grown, and forms the staple diet of the native. The *yam* or *ufi* comes next, and an occasional cabbage, a few beans or an egg plant are sometimes obtainable. There are no greens and salad plants, except small onions. All root vegetables and many fruits are exceedingly fibrous, and are rich in lime and starch.

The dietary habits are simple. As a rule but one meal, or at most two, are taken daily, but fruit of various kinds, sugar cane, and cocoanut are eaten all day long, by both children and adults, whenever they can be procured. The morning meal often consists of cooked taro and a drink of water or coconut milk. The evening meal usually consists of taro, with a minimum of fish, land crab, or perhaps tinned meat, cooked unripe bananas, with water or coconut milk as a beverage. A young coconut such as is used for drinking, contains nearly a quart of milk, which, at just the right stage, is almost effervescent. It is a delicious and satisfying beverage. Instead of the hard meat of the mature nut, the shell is lined with a thin layer of soft gelatinous substance which the native scoops out to eat.

The food of pregnant mothers and young babies is carefully watched. The mothers eat no meat or red fish during pregnancy. Most babies are breast fed for nine months, though prepared milks are now used to some extent. At ten months infants are given a certain kind of cooked banana and taro. The food is chewed by a young healthy girl, and fed to the child. Later the child is given a tiny piece of fish or fowl, but all children, young or old, are given fish, fowl, or meat, in very small portions.

Niué cooking processes are limited. Saturday afternoon is the great cooking day on which the family oven or *umu* is used. Sticks and dry oily parts of the coconut tree are placed on the coral ground and lighted; fresh coral is piled on the top and heated to a great heat. Some of the hot coral is then removed; the prepared food is placed on the hot coral stones and more heated coral is placed over the food. Leaves are spread over these and lastly a sack is placed on the leaves to keep the heat in. Thus is the food half baked and half steamed for from two to three hours,

when it is ready to eat. What is not immediately required is re-covered and left cooking over night. The oven is in the cook-house, which has a palm-leaf roof, and a coral floor, but no sides. The utensils are huge bush knives, a big wooden trough (*kumete*), a strainer of *laukala* which is a brown material found at the base of the coconut leaf, a native grater which is a piece of an iron hoop set in a piece of wood, the iron edge being jagged into teeth, a pail, and various piles of leaves which serve as saucepans and baking tins. Sea-water is used instead of salt. In making coconut cream, used in their cookery instead of water, five or six old coconuts are grated into a strainer cloth, coconut water and sea water are added, the strainer is tightly wrung, and a white cream flows out. With this the following dishes are prepared:

Kaofi, a mixture of the root of a plant they call maniota and coconut cream, rolled in banana leaf and cooked in the native oven.

Faikai ika, fresh fish, cleaned, covered with cream, rolled in a leaf, and cooked in the oven. A chicken is similarly prepared.

Luu, young taro leaves placed in a banana leaf, coconut cream added, and the parcel wrapped in lautea leaves for protection during cooking.

Faikai loku, sliced paw-paw, mixed with coconut cream and arrow-root, rolled and tied in leaves for baking.

Vaihalo, arrowroot mixed with scraped young glutinous coconut and the milk from the nut, boiled in a saucepan, or cooked by inserting a white-hot stone in the vessel. This is a pleasant-tasting sweet porridge and is served hot, in half coconut shells.

Taro are pared and baked in the oven; bananas are preferred green, baked in their skins. Eggs are not eaten by the natives. Chickens, though an important feature of all feasts are rarely eaten at other times.

To sum up, the dietary is starchy and bulky, low in protein, high in fat from the coconut. The people look well-nourished, but not over-fed, and are noted for being the best workers among the Pacific natives. Venereal and skin diseases, first introduced by whites, are prevalent but, apart from these, the natives are a healthy people.

A UNIFIED PROGRAM OF EXTENSION WORK FOR THE FARM HOME¹

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The west is setting the pace for the nation in growth and development. The increase in the number of farms in the ten western states, according to the last census, was from 10 to 119 per cent, while for the whole United States it was only 1.5 per cent. The west is predominately rural. Land is the great asset and the instinct of the westerner is to make his living from the land; therefore, the land grant colleges and the United States Department of Agriculture play an important part in development and progress.

The unified extension program for the farm home must take care of all interests of the farm home, i. e., the home economics interests and the agricultural interests of the farmstead which usually come under the direct management of the women and girls.

Last year in the fifteen southern states, 308,000 of the 517,000 women and girls, who conducted their demonstration under the guidance of home demonstration agents, reported that the farm home productive activities such as gardening, preservation of fruits, vegetables, and meats, poultry work, home dairy work, growing of flowers for sale, saving on clothing work and the fireside industries, had a valuation of \$18,316,880. Twelve millions of this went for necessities in the home while six millions went for comforts, pleasures, education of boys and girls, investments, and bank accounts. The amount produced by that number of farm women and girls in only one section of the country was as much as all agricultural and home economics extension throughout the United States costs from all financial sources. No one can question extension work as a good investment for the country.

Intellectual and physical efficiency is based primarily upon a well nourished body. The farm woman is learning through home demonstration work to provide proper and adequate diets for her family. She is being helped to a full realization that her first responsibility above

¹ Abstract of an address presented at the Fifteenth Annual Meeting of the American Home Economics Association, Corvallis, Ore., August, 1922.

everything else is to give her child a fair chance to live, to grow, and to develop into a normal healthy human being. This woman is also learning to conserve her own time and vitality.

Clothing has been a popular project in the extension program and it plays an important part because it has been made practical and economical. However, if a county has nothing to report in its home demonstration work but dress forms and hats, it cannot hope to make a deep impression on the public mind.

The taste that most women and girls have for the aesthetic is being developed by helping them to make the home itself attractive as well as comfortable. The unified program provides also for the beautification of the entire farmstead.

Community movements and activities have been stimulated, and the program should represent the needs of the prevailing home in the county or community.

All extension workers, both men and women, must play a part in the execution of the program. No other country has recognized women's ability and responsibility to quite the same extent as it has been recognized in the extension service in this country. The extension service is dependent upon the research work in agriculture and home economics in colleges and universities, and stands back of any movement which promotes it.

The home economics extension workers are proud of their section in the American Home Economics Association. The support and inspiration we get from the Association will lead us on to greater service.

A NUTRITION DEMONSTRATION

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One of the chief causes of deficiency in the dietary of certain sections is the rather limited quantity of milk consumed. This applies more especially to certain rural communities but is not peculiar to Florida alone. It is probable that the southeastern states have a similar diet. In order to help the extension worker demonstrate the value of adding milk to the limited diet common in Florida, some experiments were

conducted with albino rats. A basal ration was fed consisting of rice, grits, salt pork, sweet potatoes, cane syrup, and a very small amount of collards. One group of animals was fed this monotonous diet without milk. To one group was given, in addition, whole milk powder equivalent to one glass of milk per day calculated on the basis of the calories provided by milk, when one glass of milk per day is taken by the average child of five years; to a third group was given a ration supplemented by whole milk powder equivalent to one quart of milk in the dietary of a child of five.

It was estimated that, after drying, one gram of sweet potatoes yields 3.7 calories, and one gram of milk powder gives 5 calories. The ration containing milk in proportion equivalent to a quart a day was formulated as follows:

Ration containing equivalent of one quart of milk

	<i>per cent</i>
Whole milk powder.....	33.33
Hominy grits.....	40.00
Polished rice.....	6.66
Sweet potatoes (dried).....	6.66
Salt pork.....	6.66
Cane syrup.....	3.33
Collards.....	3.33

Ration containing equivalent of one glass of milk

	<i>per cent</i>
Whole milk powder.....	8.0
Hominy grits.....	52.0
Polished rice.....	10.0
Sweet potatoes (dried).....	10.0
Salt pork.....	10.0
Cane syrup.....	5.0
Collards....	5.0

A great difference was observed in rate of growth, adult size, appearance, and behavior of the rats on these different rations. The group receiving milk equivalent to one glass per day were intermediate in size between the other two groups. Behavior was normal. Those rats which got no milk were stunted, rough coated, and of vicious and nervous disposition. They showed a tendency to have scaly, bloody ears and tail. For example: at the end of a similar period of time, a rat on diet (1) gained 14.5 grams; a rat on diet (2) gained 93 grams; a rat on diet (3) gained 225 grams. The live animals were sent to the county and state fairs for exhibition in the nutrition booths. Considerable interest was thus aroused in the topic of milk consumption. They were also

used to illustrate lectures to groups of school children from kindergarten to high school and appeared before women's clubs and parent-teacher's associations. The United States Bureau of Animal Industry became interested. They offered to prepare two sets of rats as permanent exhibits. One set of stuffed rats was kept in Washington and one was returned to Florida. The workers in Florida may now use either the live rats or the stuffed ones for demonstration purposes. The stuffed rats have been on exhibition during several weeks of milk campaigns, in different parts of the state. A large increase in milk consumption is being observed. It is easy to impress the fact that not only must some milk be taken, but also that the supply must not be stinted. Litters of young have been successfully reared by the rats receiving milk.

It was thought advisable to attempt an analysis of the supplementary value of the milk powder. A new series of experiments was begun to note the effect of milk constituents when added to the milk free ration, separately. In one, 10 per cent casein alone, in another 10 per cent casein and 5 per cent McCollum's salt mixture no. 185, and in a third butterfat in addition to casein and salts have been incorporated. After five months the rate of growth observed with addition of casein alone is much better than that obtained on the same ration without such addition. The ration containing both casein and salts addenda is most beneficial of all. There seems to be no additional acceleration of growth produced by addition of five per cent butterfat to this ration. This may be explained on the ground that yellow corn meal was used in this set of rations. Col-lards were omitted. Addition of casein and salts gives as good a rate of growth as addition of milk powder. For example: at the end of a similar period of time, a rat on the milk free ration plus the casein gained 43 grams; a rat on the milk free ration plus the salt mixture gained 270 grams; a rat on the milk free ration plus the butter fat gained 206 grams. These experiments seem to indicate that it is the quality of protein and the inadequate supply of inorganic salts which account for deficiencies in the southern dietary.

The experiment has been repeated several times, and there will be no difficulty in repeating it in other laboratories.

STUDIES ON CALCIUM AND MAGNESIUM METABOLISM
IN NORMAL WOMEN¹

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The subjects of these experiments were twelve normal young women. During a sixteen day period, their food intake was definitely controlled and quantitative collections of urine and feces were made. Both the food and excreta were analyzed for calcium, and their magnesium content also determined in one group. In this way, calcium and magnesium intake, excretion, and balances were determined. The subjects were divided into three groups of four each and the experimental period consisted, in each case, of four four-day periods. The object of the experiment with the first group was to ascertain whether an increased intake of calcium would affect the urinary and fecal excretion of magnesium and vice versa, thus showing interrelations between the metabolism of these two elements. In the case of the second group, the experiment was undertaken to investigate the effects of acid-forming and base-forming diets upon calcium excretion, while, with the third group, the diets were arranged with the hope of bringing to light the relation, if any existed, between the vitamine content of the diet and calcium assimilation. The diets were planned so as to provide adequate and constant amounts of energy, protein, fat, and ash constituents throughout the experiment. Only distilled water was used for drinking or cooking purposes. Tea and coffee were allowed in moderate amounts. The chief articles of the diets were white bread, purified butter or nut margarine fat, very lean, minced beef, potatoes, rice, peanut butter, apples, sugar, and milk (Merrell-Soule dried milk diluted to constant composition with distilled water). The basal rations of the third group, selected so as to be as low in vitamine as possible, consisted only of very lean beef, rice, white bread, sugar, cornstarch, purified fat from nut margarine, and skimmed milk powder. The vitamine content of the diluted milk powder was probably still further reduced by cooking with rice in a pressure cooker (25 minutes at 10-15 pounds pressure). The following table shows roughly the dietary procedure used with the three groups.

¹ Abstract of a report presented at the Fifteenth Annual Meeting of the American Home Economics Association, Corvallis, Ore., August, 1922.

	GROUP I	GROUP II	GROUP III
Period I	Basal diet low in calcium and magnesium	Balanced diet, approximately equal amounts of acid and base-forming elements	Basal diet practically free from vitamins
Period II	Basal diet plus 6 gm. magnesium citrate per day	Basic diet, consisting almost entirely of base-forming foods	Basal diet plus 6 cakes compressed yeast per day
Period III	Basal diet as in Period I	Balanced diet as in Period I	Basal diet as in Period I
Period IV	Basal diet plus 6 gm. calcium lactate per day	Acid diet—consisting almost entirely of acid-forming foods	Basal diet with butter fat substituted for nut margarine fat

The conclusions reached from the data collected in these experiments are, in brief, as follows:

Group I. Interrelations between calcium intake and magnesium output and between magnesium intake and calcium output have been definitely established. An increase in the intake of calcium, by the ingestion of calcium lactate, caused increased magnesium output, while the ingestion of magnesium citrate resulted in an increased calcium excretion.

Group II. The base-forming diets tend to divert calcium from the urine to the feces, while the acid-forming diets increase urinary calcium at the expense of fecal calcium. While the results are not conclusive they indicate a tendency toward decreased elimination of calcium with lowered negative balance on base-forming diets, and increased calcium excretion with augmented negative calcium balances on acid-forming diets.

Group III. The addition of yeast to a basal diet, practically free from vitamins, led to lowered excretion of calcium and exerted a very favorable influence upon the calcium balances, usually changing negative balances to positive or to equilibrium. The substitution of purified butter fat for an equal weight of purified fat from nut margarine also resulted in decreased calcium elimination. The urinary calcium was usually unaffected but the amount of calcium in the feces was lowered. These facts suggest some influence of the vitamin content of the diet upon calcium assimilation.

REPORT OF WORK ON ENERGY EXPENDITURE FOR SEWING
AND SOME OTHER HOUSEHOLD TASKS¹

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The year's work was a repetition of last year's work on sewing, with a woman as subject, in order to check the results after a lapse of a year; and an extension of the work subsequently to check that on washing dishes, ironing, and sweeping, done previously by another subject.

The young woman who served as subject is 5 feet 6 inches tall. Her average weight is now 134 pounds, which is five pounds less than last year. During the experimental period she always ate the same kind of breakfast so as to secure uniformity in the energy expended for the digestive processes.

The breakfast consisted of: $\frac{1}{2}$ grapefruit with 1 teaspoon sugar, 6 tablespoons toasted corn flakes with 2 teaspoons sugar and $\frac{1}{2}$ gill cream, 1 slice of buttered toast, 1 glass milk.

A routine for the day was followed consistently. The subject ate her breakfast at approximately 8:00 o'clock in the morning and entered the calorimeter about three-quarters of an hour before the experimental period and record keeping began at 11:30 a.m. The experiment continued for two hours, during which time a carefully prescribed routine was followed. The carbon dioxide and water-vapor output were calculated from the weight of the absorbers in which they were collected. The heat records from which the energy output was computed were chiefly made by automatic devices of great accuracy.

The energy eliminated when the subject is at rest must be known in order to determine the amount of energy used in performing a certain task, the difference in energy output between the rest and work periods giving the energy involved in the performance of the work.

During the sewing experiments the subject was seated in a bentwood, cane-seated chair and remained as quiet as possible, avoiding any movement not connected with the work. The hand sewing was done on sheets at speeds of 18 and 30 stitches per minute which made it possible to determine the relation between the rate of work and the energy

¹ No account of these investigations would be complete without mention of the work of Mr. H. G. Barrot, in charge of the Respiration Calorimeter Laboratory and his associates, Mr. W. B. Emerson, Mr. S. C. Clark, Mr. M. H. Sherrill, and Miss Miller, on whom fell all the responsibility for securing the accuracy of the apparatus, supervising the routine of each test, and calculating the results.

expended. Sewing on sheets at 18 stitches per minute also served as a basis for comparison with sewing on other material such as a woolen army blanket. Earlier work on machine sewing, with both foot and motor driven machines was also repeated. The results agree very closely with those previously obtained except in the case of sewing with the foot-driven machine; there the value was much lower, because of the removal of a braking effect on the belt where it ran through the table top and rubbed heavily on the edge of the holes; this change reduced by about 50 per cent the amount of energy necessary to operate the machine.

For the sake of uniformity only one kind of stitch was used in hand sewing. This was the ordinary hemming stitch, the thread being pulled completely through with each stitch. The hem had been turned in advance, and threads of uniform length (37 inches) were provided. The movement of the arm gradually lessened as the thread grew shorter, but the rhythm was always the same and all work was timed to the beat of a metronome.

The energy required for sewing on the soft wool blanket was less by approximately 25 per cent than on the sheet, although the blanket was much heavier. The lower figure we attribute to the more open texture of the material and greater ease in putting the needle through.

In dishwashing experiments a table of adjustable height was used, and the comparative amounts of energy expended when working on surfaces of four different heights were determined. In one set of experiments the table was too low for comfort; in two, it was too high; and in one, it was set at the height which seemed the most comfortable to the worker.

The dishes, consisting of two plates, two teacups, two saucers, and two bowls were taken from one pan, in succession, given ten rubs, turned; given ten more rubs on the other side, and placed in another pan. All the work was done to the beat of a metronome, beating 130 times per minute, 1 beat being allowed for each rub and 10 beats to change pieces.

When the table was set at the lowest point tested, the distance from the top of the pan to the floor was 75 cm. This was so low that it necessitated bending the body at the hips and consequently supporting the whole upper body in this "off balance" position, and increased the energy output about 25 per cent over that found when the table was at a comfortable height. Very little difference between the energy expenditure

was noted in the experiments where the table was too high, and in those where the table was at a comfortable height. This is thought to be principally because the worker was able partially to support her arms on the edge of the pan. If the arms had been held free, the amount of energy expended to support them would probably have increased the total by several per cent, as was the case in the previous similar experiments.

The task of sweeping was done on the bare floor of the calorimeter as in earlier experiments. The broom was moved at the rate of 38 strokes per minute; the effective portion of the stroke was the forward movement and the broom was lifted from the floor during the return.

The ironing was done with towels 16 inches square and a 5-pound iron, and the board was placed at the same height as in the previous work with another subject. The rate of work was 70 strokes of the arm in 50 seconds with 10 seconds to change towels.

The following tables give a summary of experiments carried on in 1921-22.

Energy expended in carrying on household tasks by Subject E. M. 1921-1922

KIND OF WORK	NUMBER OF EXPERIMENTS PERFORMED	AVERAGE AMOUNT OF TOTAL ENERGY EXPENDED PER HOUR	AVERAGE AMOUNT OF ENERGY EXPENDED FOR WORK ALONE	DATE OF EXPERIMENTS
		<i>calories</i>	<i>calories</i>	
Rest.....	13	66.7		Dec., 1921-Mar. 10, 1922
Rest.....	14	61.2		Mar. 10,-May 1, 1922
Rest.....	6	64.0		May, 1922
Machine sewing:				
Foot-operated machine.....	8	87.6	20.9	Dec., 1921-Jan., 1922
Motor-operated machine.....	10	75.6	8.9	Dec., 1921-Jan., 1922
Hand sewing:				
Sheets, 18 stitches per min.....	5	72.3	5.6	Jan.-Feb., 1922
Sheets, 30 stitches per min.....	6	76.1	9.4	Jan.-Feb., 1922
Blanket, 18 stitches per min.....	11	71.0	4.3	Feb.-Mar., 1922
Dishwashing:				
Top of pan from floor, 75 cm.	3	93.5	32.3	Apr., 1922
Top of pan from floor, 92 cm.	6	86.1	24.9	Mar., 1922
Top of pan from floor, 107 cm.	3	83.8	22.6	Apr., 1922
Top of pan from floor, 117 cm.	5	84.1	22.9	Apr., 1922
Ironing.....	5	88.0	24.0	May, 1922
Sweeping.....	7	105.0	41.0	May-June, 1922

Since the routine followed with the subject E. M. in 1921-22 was as far as possible the same as in similar experiments made with the same subject in 1920-21, and with the subject L. B. in 1919-20, the results for the three years are comparable. Table 2 summarizes the average hourly energy expenditures for different tasks as determined during the three years' work.

Comparison of energy expended in carrying on household tasks by different subjects and at different periods

KIND OF WORK	ENERGY EXPENDED PER HOUR FOR WORK ALONE		
	Subject F. B. 1920	Subject E. M. 1921	Subject E. M. 1922
	calories	calories	calories
Knitting.....	10.1		
Crocheting.....	8.3		
Darning.....	8.0		
Hand sewing, 18 stitches per min.:			
Handkerchiefs.....		5.8	
Duck, 8 oz.....		5.6	
Sheeting.....		5.6	5.6
Blanket, army.....		4.3	4.3
Hand sewing, 30 stitches per min.:			
Sheeting.....	10.0		9.4
Blanket.....		7.2	
Machine sewing:			
Motor-driven machine.....		8.3	8.9
Foot-driven machine.....		33.6	20.9
Dressing infant.....	23.6		
Washing towels.....	49.6		
Ironing towels.....	24.3		24.6
Sweeping floor.....	40.1		
Washing dishes:			
Top of pan from floor, 75 cm.....			32.3
Top of pan from floor, 78 cm.....	30.0		
Top of pan from floor, 92 cm.....			24.9
Top of pan from floor, 98 cm.....	20.3		
Top of pan from floor, 107 cm.....			22.6
Top of pan from floor, 113 cm.....	24.4		
Top of pan from floor, 117 cm.....			22.9

SUMMARY

From the data reported, it appears that knitting, crocheting, darning, and hand sewing make moderate demands on the body as regards energy expended per hour compared with washing, ironing, sweeping, and dishwashing. The differences observed in energy expended on sewing light-weight and heavier cloth are small, and are not sufficient for

general deductions. These tests do not take into account such matters as fatigue from sitting in one position, from monotony of work, etc., but simply the energy expended per hour for the work done. Sewing on a machine driven by foot power makes much more demand on energy expended per hour than sewing either by hand or by a motor-driven machine, but it entails a much lower expenditure of energy per yard of sewing than hand sewing. Sewing with a motor-driven machine makes slightly less demand on body energy per hour than sewing by hand and much less than sewing by foot-driven machine; the energy expended per yard of sewing is also proportionately smaller.

Of the other tasks studied, washing and sweeping make the largest demand per hour, and dressing an infant (a life-sized model) about seven times as much per hour as hand sewing. Dishwashing, at a table of such a height that it "fits" the worker, makes a demand on the body of about 21 calories per hour as compared with about 30 calories with a working surface too low for the worker, and about 24 calories per hour with too high a working surface.

AN ANALYSIS OF TEXTBOOKS IN CLOTHING AND TEXTILES

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(Concluded)

DISTRIBUTION OF SPACE AMONG THE FOURTEEN MAJOR TOPICS

In order to portray more clearly the persistence and recurrence of fundamental subject matter in clothing and textiles as shown in the 43 texts analyzed, a study of percentages devoted to each of the fourteen major topics was made. Even a superficial examination indicated that these books have been characterized by considerable diversity in the number and combination of topics, a characteristic not unnatural in a field which is relatively young and rapidly developing.

The most useful and efficient material to be included in any school subject must of necessity be determined (1) by the ends to be accomplished through the subject in question, and (2) by a careful study of the needs of society, a test which Woody¹¹ has applied to spelling texts. A

¹¹ Woody, C., *Jour. of Educ. Research*, I.: 119, Feb. 1915.

description (unpublished—Division of Home Economics, University of Minnesota) states that home economics as a college curriculum in a university should include: (1) preparation for homemaking; (2) preparation for home economics teaching and extension teaching in home economics; (3) preparation for vocations outside the home into which women enter and for which a major in home economics is desirable, such as dietetics or institutional management. This description, applied in whole or in part, would hold true for other types of schools in which home economics is taught and for which textbooks are needed.

The topics which should be included in textbooks for accomplishing these ends can be determined only after a careful analysis of all of the operations of homemaking, institutional management, and other occupations for which home economics curricula prepare. From this point of view the variability of topics previously referred to may be expected, and may in part constitute an effort to find the most socially useful material. There is sufficient evidence of a fairly well-defined core of subject matter which has been developed. Furthermore, other factors have contributed to the variations observed in the distribution of subject matter.

The authors' conception of the function and place of textiles and clothing in relation to the whole field of home economics has often been quite dissimilar. The content of home economics itself has been passing through a period of evolution which would explain many of the modifications of textiles and clothing subject matter. Finally, the authors have planned for diversified groups of students.

Increases or decreases in the amount of emphasis placed upon the several topics during this period, are shown in nearly all of the percentage distributions of the major topics during the semidecades tabulated (see Table I). These variations are not constant for all of the topics, and have been influenced to some extent by changes in social and economic conditions.

There has been a very slight tendency to decrease the attention given to *general instruction and supplies*, it having occupied a smaller percentage of space since 1910 than before that date. Such formal exercises as the teaching of correct methods of placing a thimble on the finger, and of threading a needle with a given number of movements are less frequently found or more likely to be covered by a single sentence in the more recent texts.

Patterns, drafting, and draping as a topic has fluctuated greatly, so far as relative emphasis is concerned. The highest peak was reached in 1900 to 1904, when 23 per cent of the space in the four books published was devoted to this subject. The lowest point occurs in the two books published since 1919, in which an average of less than 2 per cent was given over to this material.

TABLE I

Average Percentage Distribution by Semi-Decades, of Subject Matter in Texts Analyzed

TOPICS	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920
General instruction and supplies.....	10.84		9.71	5.72	9.04	8.56	5.77	4.54	5.22
Patterns, drafting and draping.....	12.17		9.13	11.69	23.01	3.70	8.96	9.16	1.70
Applied design.....				3.18	1.14	1.52	1.14	3.58	2.87
Sewing processes.....	4.43		34.02	22.57	40.70	41.42	24.50	18.64	14.37
Garment construction.....	51.10		29.98	26.85	7.06	16.35	21.51	28.18	16.70
Care of clothing.....	9.07		7.42	8.31	14.72	9.31	9.65	3.87	8.82
Millinery.....	7.97							0.85	
Knitting, crocheting, and lace making						4.46	0.45	0.48	
Textiles manufacture.....			0.60	3.43		5.32	6.28	4.60	4.94
Textile fibers.....			0.86	8.69	3.16	4.00	11.94	14.68	19.47
Fabrics and their uses.....	4.43		7.34	8.04	2.47	3.37	7.80	8.80	21.43
Glossary.....				0.22			0.06	0.57	
Bibliography.....						0.43	0.52	0.29	
Index.....			0.60	1.31	0.98	1.58	1.42	1.81	3.53

Applied design has occupied a small space throughout all the decades studied. The most significant change occurred about 1915, the percentage space changing from 1.1 per cent for the 13 books published in the five years preceding that date, to 3.6 per cent for the 14 books put out in the five years following it. A textbook study probably pictures this phase of clothing work more inaccurately than any of the topics under discussion, as nearly 50 per cent fail to include art applications. In view of the fact that four-fifths of the cases where applied design was not included occurred previous to 1915, it would seem that the topic has secured comparatively recently a place in the subject matter of clothing and textiles.

The emphasis placed upon *sewing processes* has grown and then declined. The high level, approximately 40 per cent, occurred between 1900 and 1919. Since 1909 a change in the popular conception of the nature of work in clothing has resulted in the decreased emphasis placed upon sewing processes, to which certain economic and psychological considerations have probably contributed. The use of samplers which was responsible for the large percentage of space devoted to sewing processes during certain of the periods studied has been noted previously.

Garment construction and sewing processes are necessarily closely associated, the one embodying the practical application of the other. It is to be expected, therefore, that the emphasis placed upon garment construction would show a considerable decline until 1905; since then it has been gradually increasing. The average yearly percentages, when plotted, show this clearly, as the peak in the curve representing the relative amount of space devoted to sewing processes corresponds in date to the low point in the garment construction curve, and as the one descends the other ascends. For this and the preceding comparison the five textiles texts were omitted.

Care of clothing reached its highest peak in the 1900-1904 period; since then it has gradually declined. The earlier books devoted much more space to the discussions of darning and patching than did the later texts. Since 1917, however, a tendency to increased emphasis has appeared. The latter change is likely attributable to a response on the part of the textbook writers to the general thrift movement which started during the war.

Millinery has been given little attention, three authors only having included it, and from three to eight per cent being the range of space allotted the subject.

Hand knitting, crocheting, and lace making also has not generally been considered a part of this subject matter field. Only five authors have included any portion of this topic, although 16 per cent of the contents of one book were devoted to it.

Textiles has received more and more emphasis during the periods studied. In *textile manufacture* a slight lessening of emphasis has obtained since 1915. The extremes of emphasis placed upon this topic would doubtless well illustrate the effect of the previously mentioned differences in fundamental interests and experiences of the various authors.

The gradual increase in the degree of emphasis placed upon the consideration of *textile fibers* is also clearly shown and is closely related to both textile manufacture and to the study of fabrics and their uses.

Fabric study is the connecting link between textiles and clothing. The products of textile manufacture are the materials of clothing construction. Since 1905 fabric study has been receiving a growing amount of attention, which has been especially marked since 1917. This topic, in particular, shows the response made by textbooks to one of the more recently recognized fields in economics, the economics of consumption, and also shows a recognition of the highly important part played by women in that field. In fact, textiles as a whole may be said to be very largely preparation for more efficient consumption, a type of training which has not been ignored in clothing work.

DISTRIBUTION OF SPACE AMONG FIVE SELECTED SUBTOPICS

Clothing and textiles is a comprehensive term. The field includes a large volume of subject matter, and any classification, like that used in the present study, which condenses such a multitude of detail within the confines of fourteen topics, obscures thereby certain evidences of evolution. On the other hand, it would obviously be impossible, within the limits of the present paper, to trace the progress of each of the 54 subtopics, or of their minor subdivisions. Five subtopics have been chosen to illustrate the character of changes which have occurred during the past four decades, so far as textbooks have reflected such modifications, these having been selected because of certain economic and social considerations (see Table II.)

TABLE II
Average Percentage Distribution, by Semi-Decades, of Five Selected Subtopics in Texts Analyzed

SUBTOPICS	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1914	1915-1919	1920
Sewing machine and its uses*			0.46		0.08	0.44	0.59	0.70	2.33
Drafting and pattern making*	10.65		8.83	11.69	22.74	3.21	8.55	6.00	
Commercial patterns and their use*	0.20		0.26			0.32	1.78	2.96	1.70
Remodeling					0.04		0.37	0.15	0.63
Economics of clothing and buying	4.10		2.00		0.11		1.79	1.89	5.30

* Three books in 1910-1914 and two in 1915-1919 omitted in averaging for this subtopic because essentially devoted to textiles.

The *sewing machine and its use* have not been included in all clothing texts, but the number in which it has been discussed has increased noticeably since 1894, when the subject was first mentioned. It is not included in the five textiles textbooks which have been omitted for this particular discussion. Of the 38 clothing books, 14 give some space to the sewing machine. Ten years elapsed between the first reference in 1894 and the second mention of the subject in 1904. Material on this subject was found in three other books published previous to 1915. Since then 9 of 16 books have included it.

The proportional amount of space devoted to the study of the sewing machine has increased considerably since 1905. The actual amount of material on the subject has not been large at any time, and very few illustrations have been used despite the complicated nature of the mechanism discussed. Three books published between 1905 and 1914 had approximately one half of one per cent devoted to the sewing machine, nearly all of which was text, 3 illustrations having been used in one book. Clothing texts published in the five years following contained a greater amount of such material, with a more liberal use of illustrations. Although there was less than one illustration per book during this period, they occupied about one-sixth of the total space devoted to the subject. The two most recently published of these clothing texts have both treated the subject at much greater length than did their predecessors, the total amount averaging 2.4 per cent. There has been no freer use of illustrations than during the earlier period, their proportion being less than 0.2 per cent. The sewing machine is one of the most important home labor-saving devices and is much more commonly owned today than it was even twenty years ago. Its wider use would seem to justify a greater increase in emphasis.

The statement is frequently made that *drafting and pattern making* has been receiving less emphasis since commercial patterns have become so plentiful. The prominence of drafting in clothing texts would indicate that the above statement should be qualified. The average amount of space given to drafting, which has appeared in 20 of the 38 clothing books, has changed from 9 to 12 to 23 per cent, respectively, during the three semi-decades after 1890. The next five-year period saw the amount decreased to 3 per cent, but it increased to 8.5 per cent and then fell to 6 per cent in the two following semi-decades. Of the books published between 1915 and 1919 a larger proportion contain drafting than do those of either the two preceding periods. The two most recent books contain no reference to drafting. Illustrations have been quite freely used, often occupying nearly as much space as the text, which is partly due to the large-sized illustrations required. These textbooks present evidence that drafting must still be considered practicable by a considerable number of persons. (See Table III.)

A very different picture is presented in the material concerning *commercial patterns and their use*. The subject has had a more recent origin than did drafting, having been only briefly mentioned in the two books published previous to 1908. Since that date there has been a consistent growth in the attention paid to the use of such patterns. Each successive decade has shown an increase in the number of books, and in the percentage of books published, which include it, and also an increase in the total space devoted to the subject. Generous use has been made of illustrations, which average 5 per book, for the decade preceding 1920. Table IV shows this increase in the space devoted to commercial patterns and the part occupied by illustrations. This growth has followed a rapid development in the manufacture and use of commercial patterns.

Remodeling has not been included widely in clothing and textiles work as outlined by textbooks. The subject is found in 7 of these 43 texts, but in only one did the amount exceed 1.3 per cent of the total, and 3 had less than 0.5 per cent. The allowance of space in the last two books of those studied was 0.6 per cent, the highest average for any of the semi-decade periods. One illustration was found in the book published in 1920. In the

light of common practice this subject might seem to have been slighted in these textbooks, but certain factors may have contributed to the limited space allotted. Careful and wise selection of clothes means a reduction in time spent on "making over" garments, an increased use of ready-to-wear garments has had a similar effect, and finally, the sewing processes used in garment reconstruction duplicate those employed in their construction.

TABLE III

Distribution by Semi-Decades of Subject Matter Concerning Drafting and Pattern Making in the Clothing and Textiles Texts Analyzed

PERIOD	NUMBER OF BOOKS	PER CENT OF ALL CLO. BOOKS	AVERAGE TOTAL PER CENT	AVERAGE PER CENT TEXT	AVERAGE PER CENT ILLUS.	AVERAGE NUMBER ILLUS.
1880-1884	1	100	10.65	6.63	4.02	11.0
1885-1889						
1890-1894	1	50	8.83	7.05	1.78	5.0
1895-1899	2	66	11.69	8.26	3.42	10.6
1900-1904	3	75	22.74	17.58	5.15	10.2
1905-1909	2	50	3.21	1.62	1.59	8.0
1910-1914*	4	40	8.55	5.23	3.31	6.3
1915-1919†	7	58	6.00	4.39	1.61	7.7
1920-						
Totals.....	20					
Averages.....		48.8	7.96	5.64	2.32	6.53

* 3 books in this period omitted in average because devoted to textiles only.

† 2 books in this period omitted in average because devoted to textiles only.

TABLE IV

Distribution by Semi-Decades of Subject Matter Concerning Commercial Patterns and Their Use in Clothing and Textiles Texts Analyzed

PERIOD	NUMBER OF BOOKS	PER CENT OF ALL CLO. BOOKS	AVERAGE TOTAL PER CENT	AVERAGE PER CENT TEXT	AVERAGE PER CENT ILLUS.	AVERAGE NUMBER ILLUS.
1880-1884	1	100	0.20	0.20		
1885-1889						
1890-1894	1	50	0.26	0.26		
1895-1899						
1900-1904						
1905-1909	1	25	0.32	0.32		
1910-1914*	4	40	1.78	0.75	1.04	3.5
1915-1919†	9	75	2.96	1.90	1.06	6.6
1920-	2	100	1.70	1.46	0.24	2.5
Totals.....	18					
Averages.....		43.3	0.80	0.54	0.26	1.4

* 3 books in this period omitted in average because devoted to textiles only.

† 2 books in this period omitted in average because devoted to textiles only.

Economics of clothing and buying was used to include a number of subdivisions, such as discussions of clothing budgets, the selection and purchase of clothing, the Consumers' League, and labor conditions in relation to the production and consumption of clothing. With two exceptions the introduction of this subject into textbooks might be said to date from 1912; since then it has been given a widely varying proportion of space in nearly two-thirds of the books. The exceptions cited were two of the books previously described as having been primarily intended for the general consumer. As much as 12 per cent of one book, published in 1913, was devoted to these applications of economics, and as little as one-third of one per cent of a second book, published in 1918. The subject appears in both textiles and clothing books and is found included in the contents of 18 of the 43 studied. Since 1913 the average percentage per semi-decade has increased, a development most marked in the two publications dated since 1919. The illustrations used have occupied a very small proportion of space.

The pronounced increase in the use of ready-to-wear clothing has necessitated a consideration of all phases of selection quite aside from questions of clothing construction. The matter of quality, suitability, budget distribution, and similar points have attracted attention, especially since thrift has been stressed. Again we find a reflection of the growing recognition of the power and responsibilities of the consumer.

SUMMARY

This study has attempted to show the development of subject matter in clothing and textiles as determined by textbooks, and to ascertain the persistence and recurrence of fundamental topics developed by texts in this field. The outstanding facts of the study may be summarized as follows:

1. A large amount of textbook material concerning textiles and clothing has been published. The 43 books, which represent the available material, have been examined.

2. As to content and organization, in most cases clothing and textiles have been developed separately from other phases of home economics. Clothing has occurred alone about as often as it has been combined with textiles, while textiles texts have developed during the last decade. The subjects which have received major emphasis in the clothing field are, (1) sewing processes, (2) garment construction, (3) patterns and drafting, and (4) the care of clothing; in the textiles field, (1) textile fibers, (2) fabrics and their uses, and (3) textile manufacture.

3. A variety of different grades and kinds of schools have been planned for, but the books have been used interchangeably with considerable disregard of the purpose for which the text was written, and probably, to some extent, of the needs of the users.

4. The amount of emphasis placed upon the several major topics in these textbooks has shown marked fluctuations. These variations are not constant for all the topics, and are especially noticeable in the

case of patterns, drafting, and draping. The space allotted to sewing processes has declined while that devoted to garment construction has increased. Textiles has received a greater share of attention in the later books. Significant changes have also taken place in the minor subdivisions of this subject matter, as shown by the following illustrations. The sewing machine has been allotted an increasing amount of space which would still not seem to be proportional to the actual use of the machine. Drafting is given less space but has decreased in amount less than popularly supposed. The use of commercial patterns is coming to be an important subject, while remodelling is not stressed to any appreciable degree. The economics of clothing and buying has persisted in spite of noticeable fluctuations, and is increasing in amount.

5. Illustrations have increased in number and improved in quality.

6. Indexes and bibliographies are being used more freely, but a surprisingly large number of these volumes have omitted these as well as charts, graphs, and tables, which are only beginning to be used.

7. The dates of copyright of these books range over five decades, the earliest having been published in 1882 and the latest in 1921.

8. The size of these books, measured in 350 word pages, has averaged 200 pages. In general the total size of the books has tended to increase. The size of page has shown relatively little change, measured by the number of words per page, the average for the whole group being approximately 350 words.

The extent to which the data reported herein may be used as a guide in the preparation of new texts, or in the evaluation of texts now in use, may be limited until there are available adequate analyses of those problems pertaining to textiles and clothing which are included in homemaking and related occupations.

THE BOY'S AND GIRL'S ACHIEVEMENT CLUB

Leading educators urge a closer connection of the school with the home, the community, and the outside world. An extension program of achievement club work offers an admirable means of making this connection.

The best teachers feel strongly the need of meeting boys and girls on a footing of human companionship and fellowship in addition to the usual classroom footing. Working as a leader with an Achievement Club develops this companionship and fellowship in a very marked degree. Association in work and play is rich in humanizing and socializing results.

Character is the ultimate goal of all education. Character is the result, not so much of knowledge as of action. A good man or woman is the result of numberless good acts. Achievement work forms habits of good acting.—*Frank O. Kreager in the Journal of Education.*

EDITORIAL

To Members of the American Home Economics Association:

Your Executive Committee is very happy to announce that Miss Sweeny has promised to act as the Executive Secretary of the Association until the next annual meeting. The needs of the Association are so clearly urgent in certain directions that the Committee has asked Miss Sweeny to adopt a definite program of work rather than to accept the general responsibilities which are usually implied in an executive secretaryship. She has been asked (1) to promote the organization and affiliation of states not yet organized and to help states already affiliated with their programs of work; (2) to further the legislative program of the Association and to serve on the Women's Joint Congressional Committee; (3) to make such contacts with associations having related interests as may seem desirable for the development of our activities.

The Executive Committee requests that each affiliated state, through its president, send to Miss Sweeny at the earliest possible moment the following information: (1) the date of the next meeting; (2) the kind of help, if any, needed by the state; (3) names of persons in neighboring unorganized states on whom we can count to promote state affiliation; (4) a statement of the professional interests represented in the membership of the state association. The office of the executive secretary will be maintained for the present with the Journal Office at 1211 Cathedral Street, Baltimore. Miss Sweeny will also arrange for desk space in Washington to facilitate making the proper contacts there.

The program of work outlined for the executive secretary requires the active support of every member of the Association. Can we not set as our goals for the year (1) affiliation for every state, (2) fifty per cent increase in membership in states already affiliated, (3) a subscription to the JOURNAL from every member, (4) support of the financial plans for underwriting the executive secretary, (5) active interest in the program of work adopted at the Corvallis meeting (See November JOURNAL, p. 585) especially in making a study of organizations in the state with which we should work.

ALICE F. BLOOD,
President.

The Section of Social and Economic Sciences of the American Association for the Advancement of Science extends, through its chairman, Colonel Henry S. Graves, dean of the School of Forestry, Yale University, an invitation to all members of the American Home Economics Association to attend the sessions of the section at the Christmas meeting in Boston. The program of the section will have as its theme the conservation of our natural resources. Inasmuch as Colonel Graves hopes to interpret the meaning of our natural resources in terms of family as well as industrial welfare, the session will be of great interest to home economics women who are thinking along economic lines. A special leaflet giving details of the program may be obtained from our Association office.

The Bureau of Home Economics. In his stimulating address before the American Home Economics Association during its annual convention at Corvallis, the Honorable C. W. Pugsley, Assistant Secretary, U. S. Department of Agriculture, read the following announcement from the Honorable Henry C. Wallace, Secretary of Agriculture:

In addition to what you may say concerning our extension work in your address before the American Home Economics Association, I wish you would say to the members that we have in mind to greatly strengthen the scientific work of the Department as it may be related to home economics. Ultimately I have in view making the home economics work an independent bureau, ranking with the other bureaus of the Department, and placing at the head of it a woman of executive ability, thorough scientific training, and a broad and sympathetic understanding of what is needed to make such a bureau most helpful to the women of the land. I am quite sure that out of such a bureau will come an increasing fund of helpful information which can be taken to the homes through our extension activities.

Home economics women will be particularly interested in extracts from a letter from Mr. Pugsley to the JOURNAL in reply to a request for additional information:

The Secretary expects to ask the next Congress to approve the appointment of a Director of Extension Work in order to secure a closer coördination of all extension activities. A year ago Congress approved the appointment of a Director of Scientific Work and a Director of Regulatory Work. The work of the Department of Agriculture naturally and logically falls into these three divisions.

At the present time the Office of Coöperative Extension Work, which administers the work of county agents, home demonstration agents, and boys and girls club agents, is placed in the States Relations Service. The Office of Experiment Stations is also in this Service as is also the Office of Home Economics. In the reorganization it is proposed to put the Office of Experiment Stations under the Director of Scientific Work, the Office of Coöperative Extension Work under the Director of Extension Work, and to make of the Office of Home Economics a Bureau of Home Economics with a chief in charge who will be on a par with the chiefs of other bureaus, such as the Bureau of Animal Industry, the Bureau of Plant Industry, the Bureau of Agricultural Economics.

This is a very logical plan because investigation in home economics is a special line of work. Home economics constitutes, in fact, a subject matter division and should be treated as such. When it comes to extending the work of the subject matter division the work must all be correlated so that a balanced agricultural program results. This we propose to do through the reorganized extension work of the Department. Every subject matter division, including home economics, will have a part in the planning of the agricultural extension program.

So far Congress has appropriated its extension moneys for extension work in agriculture and home economics among the rural people of the United States. Undoubtedly as the science of home economics becomes better developed, Congress will see the necessity of extending the work to city women as well. The appropriations made to the Department for home economics investigational work do not confine the investigations to those of interest only to rural women but permit investigations in the entire field of home economics.

It is the Secretary's plan to place a woman at the head of the new Bureau of Home Economics if Congress approves the proposed change. This woman must naturally be one of thorough scientific training and of executive ability. He is anxious to get the best woman in the United States for this sort of work if she can be induced to take the position.

So far as making any announcement of the details of the organization of the Bureau I think you will readily see that this cannot be done at this time, for details have not been discussed. It will be necessary to use the Office of Home Economics as the foundation of the work. What changes are made in the subdivisions of this office, or in establishing new offices within the new Bureau of Home Economics, naturally should be made after the new chief is placed in charge. In general, about all that can be said is that the proposed Bureau of Home Economics should cover the field of home economics in as thorough a manner as is possible under the appropriation which Congress may make.

Tabloid Vitamins. The novelty of the vitamin theory has made it popular with the general public from the first. If one can procure these necessary substances in some easy form which does not disturb modern man's fixed habits of food selection, one piece of educational work has been lifted from the load of the nutrition teacher. The advertising propaganda of commercial vitamin preparations would indicate that this has been accomplished.

Two groups of investigators^{1,2} working independently, have measured the potency of several such products of seeming popularity. Their efficiency as carriers of vitamins B and C has been studied by noting the effect of their addition to experimental diets of rats, guinea pigs, and pigeons. The conclusion of both groups is that these tablet forms of commercial preparations contain so little of the vitamin claimed as to be worthless and are furthermore frauds because of extravagant statements on the labels.

The power of suggestion has been known to help along the work of many a medicine. If these vitamin tablets are effective at all when used by man even though their effectiveness can be said to lie only in the faith of the user, perhaps the dollar is well spent; but encouraging the public to think that it can obtain vitamins and health in this fashion is a barrier to the teaching of sane food habits. The place to secure vitamins is the grocery, the dairy, and the market, not the drug store.

SYBIL WOODRUFF.

Correction. The author of "The Teaching Load," printed in the October JOURNAL, regrets that, due to unavoidable delay in the return of the corrected proof, certain reports were omitted and one erroneous statement was made.

The staff for Colorado Agricultural College should read—7 full time, 2 part time, student assistants. University of Minnesota registration should read—total 15726; women 6133; home economics majors 358; per cent of women in home economics 5.8; ratio of teaching staff to home economics students 1:14. The Utah State Legislature in 1921 removed from home economics, in the University, restrictions which confined work of the course to such as was demanded for teacher training purposes, which was construed as freshmen and sophomore work.

¹ Hess, J. H., Moore, J. J., Calvin, J. K. Experimental studies with proprietary vitamin products. Jour. Amer. Med. Assn., 78, 1441 (May 13, 1922).

² McCollum, E. V., and Simmonds, N. Potency of commercial vitamin preparations. Jour. Amer. Med. Assn., 78, 1953 (June 24, 1922).

OPEN FORUM

A Christmas Project. *The Christmas project of Duluth Denfeld High School is described in detail in order that other schools may consider such an undertaking in making their own Christmas plans.*—EDITOR.

Owing to the financial crisis, school opinion pointed to the repair of what material could be gathered together, rather than taking a cash donation for the purchase of new clothing, toys, and food. There then arose the problem of gathering together old clothing, hats, coats, shoes, broken toys, kiddie kars, and dolls; repairing them and distributing them to the homes where they were most needed.

One of the school committees is a welfare committee composed of five members of the faculty and a group of students. This committee was divided into sub-committees to collect old materials, repair them, take charge of free will offerings, gather names of needy families, and distribute gifts.

Huge boxes were placed in conspicuous places at the two entrances of the school, so that students might deposit their gifts quietly and easily as soon as they entered the building. Every day there was a box overflowing with a heterogeneous mass of shoes, sleds, skates, dolls, rubbers, coats, sweaters, etc. It was the duty of one student member of the committee to unpack the boxes, separate the gifts, and bring each group to its proper department for repair.

All of the wooden toys were repaired in the woodwork department, and repainted by the members of the art department. Many a cast off kiddie kar and sled was made just as durable and just as attractive as the shiny new ones offered for sale in the down town toy shops.

Wigs of real hair were applied to dolls which had lost their own hair in the struggle of life with their three year old mistresses. The blush of youth was restored again to the cheeks of the dolls from which Fido had licked the paint the summer before. Such a healthy looking group of dolls was never seen before.

One of the local stores donated a huge box of broken toys and dolls. These toys were new but had been damaged in transit. They were soon restored to their former fitness and beauty.

The sewing department volunteered to repair the clothing and to dress the dolls. Since there was not enough class time to do both of these things the girls volunteered to dress the dolls at home. The clothing repair work was a big job and fitted in nicely with the course of

study which allows for some time to be spent on care and repair of clothing. The whole sewing room was converted into a great sewing shop, laundry, and dry cleaning establishment. Before class each day the instructor went over the garments to be repaired and labeled each one with a list of needed repairs. When the students assembled, each girl was given one garment; she read on the label the thing to be done to it, took her thread from a general supply table, and went to work immediately. At the end of ten days, we had a huge rack of suits, coats, and dresses, all cleaned, mended, pressed, and ready for distribution. In addition, there were dozens of suits of underwear, sixty pairs of stockings, several sweaters, and a dozen caps.

Sixth grade students made a score of cloth cats and dogs. Pieces of blue working shirts, good portions of old turkish towels, and gray outing flannel were used for the covering. Features were done in a contrasting mercerized cotton. They were stuffed with sawdust from the Manual Training department.

The last day of school, a free will offering was taken either in money or food. The result was fifty quarts of canned fruits and vegetables, forty glasses of jelly and conserve, flour, breakfast food, sugar, and a silver offering which was spent for coal, sugar, flour, potatoes, some underwear and hose. Every basket contained a piece of meat, potatoes, flour, breakfast food, jelly or canned fruit, clothing, and toys.

It was not difficult to find names of needy families. A small mail box was put in the hall into which a student could drop a slip of paper containing the name of the family, number of children, ages, and needs if possible. This list of eighty-five families was carefully checked with the Salvation Army, Associated Charities, and the Goodwill Society to avoid duplication.

The Friday before Christmas, the distribution committee, consisting of two teachers and a number of students, packed boxes, fitting the clothing, toys, and food to the needs of the family. Boys who drove cars saw to it that the baskets were delivered.

It was estimated that the students of Duluth Denfeld gathered together about six hundred dollars worth of Christmas gifts and had made eighty-five families happy on Christmas day.

BERNETTA SEIPEL,
Duluth Denfeld High School,
Duluth, Minn.

BOOKS AND LITERATURE

A Nursery School Experiment. By HARRIET M. JOHNSON AND CARMEN S. REUBEN, Bureau of Educational Experiments, 144 West 13th St., New York, 1922, pp. 82. \$75.

This report, descriptive of the first three years of the Nursery School established by the Bureau of Educational Experiments, is written by Harriet M. Johnson, Director of the Nursery School, with a section on music by Carmen S. Reuben, a member of the Nursery staff.

Largely because of their intimate contact with the children in the Nursery School, their report is as refreshingly free from statistical tedium as it is full of human interest—the sayings and doings of a group of eight children between fifteen months and three years of age, who, in the thirty illustrations vivifying the report, make the irresistible appeal of childhood at play.

Why the Bureau wants such young children is answered by Mrs. Lucy Sprague Mitchell in the introduction. She says that, unlike the Day Nursery or the English type of Nursery School, the Bureau's Nursery School was not established primarily to meet a social or an economic need, but rather an educational need, that is, the need (1) to study the educational factors in the environment of small children, and (2) to gather, for purposes of research, scientific data concerning their growth.

This does not mean that the physical needs of the children are neglected, for, as a matter of fact, they are most scrupulously attended to in conformity with the most advanced practice of the medical profession, but that is not the field in which the Bureau's experimentation is taking place. Its experiment has to do with the equipment and situations which, in their reaction on the children, lead to muscular coördination, to experimentation, to purposeful activities, to emotional stability. The record of this interplay between the children and their

environment forms the scientific data which the research staff of the Bureau is using to the end that the knowledge gained may be converted into an educational procedure more fully adapted to the needs of nursery children.

The writer of this review knows of no other educational experiment in this country where children under three years of age are placed in so homelike an environment adapted to the needs of childhood; where there is such close coöperation between members of the teaching staff and specialists; where the records kept are so human and yet of so exact a nature that it is possible for both mothers in the home and scientists in the laboratory to make use of them.

Because of the home, as well as the scientific, aspect of this Nursery School, it is, without doubt, destined to have a widespread influence upon the pre-school groups of children fast forming throughout the country. Particularly is this true in regard to demonstration nurseries for child care and training which are being established in connection with Homemaking Courses. For these nurseries this Nursery School may well serve, either in whole or in part, as a pattern.

It is plain that, with leaders in this new educational field eagerly looking for scientific data to guide them, this report of the Nursery School becomes of immediate value. It also has permanent value as source material of an unusually reliable nature, not only because of the efficiency of those conducting the experiment, but because they are able to so control the conditions under which they are working as to keep their educational aim paramount. In short, by publishing this descriptive report of its Nursery School the Bureau of Educational Experiments has made a valuable contribution in a new educational field.

ELIZABETH JENKINS.

Transactions of the Twelfth Annual Meeting of the American Child Hygiene Association.

American Child Hygiene Assn., 532 17th Street, N. W., Washington, D. C. \$3.00.

The addresses, discussions, and reports presented at the twelfth annual meeting are included in this volume. The following divisions will give an idea of the value of these proceedings to the home economics worker: Medical, Nursing and Social Work, The Child of Pre-school Age, Coördination of Child Health Activities, Health Education, Problems and Opportunities of Lay Directors of Private Organizations, Rural Problems.

Modern Millinery. By HESTER B. LYON. New York: Millinery Trade Publishing Co., 1922, pp. 200. \$3.00.

In this book, Miss Lyon has emphasized the points of workmanship and artistic feeling, which, in view of her extensive class room and shop experience, she has found to be essential to successful millinery work. While sufficient attention has been given to detail to insure correct technique, the author has succeeded in permeating the book with an appreciation of the broader and more subtle phases of the subject.

The contents of the book should prove to be of permanent value to both teachers

and milliners as they deal with the underlying principles of millinery, regardless of changing styles. The problems chosen are typical, the subject matter is clearly and adequately stated, and the illustrations given are unusually helpful. In short, the book is a masterly treatment of the construction processes of millinery.

HARRIET J. HEWITT,
High School of Commerce,
Springfield, Mass.

Calcium Requirements of Children. By H. C. SHERMAN and EDITH HAWLEY. A reprint of the article in the September JOURNAL. 10 cents a copy; 10% discount on orders of 20 or more. Order from the JOURNAL Office.

Nutrition. The two pamphlets, "Height and Weight as an Index of Nutrition," and "Nutrition and Adequate Food Allowances for the Family," referred to in the July JOURNAL as obtainable from the A. I. C. P., are also distributed by the Brooklyn Bureau of Charities, Charity Organization Society of New York, United Hebrew Charities of New York, New York Nutrition Council. The pamphlets are 25 cents a copy.

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NEWS FROM THE FIELD

The American Dietetic Association held its Fifth Annual Convention at the New Willard Hotel, Washington, D. C., October 16-18. The members of the Association were the guests of Johns Hopkins Hospital on October 19, and 250 persons went over to Baltimore for this occasion.

The convention was well attended and the program was so arranged as to interest the various groups at the meeting. Dietitians whose work is dieto-therapy had the privilege of hearing excellent addresses by Dr. Elliott P. Joslin, Boston; Dr. Philip L. March and Dr. L. H. Newbury, University of Michigan; Dr. Wm. S. McCann and Mrs. Agnes O'Dea, Johns Hopkins Hospital.

Nutrition and social workers were particularly interested in addresses by Dr. Mary S. Rose, Teachers College; Dr. Alfred Hess, New York; Laura Comstock, Rochester; Lucy Gillett, A. I. C. P. New York; Anna L. DePlanter, Child Federation of Philadelphia; Daisy Treen, Boston; Dr. E. V. McCollum, Johns Hopkins University; Ida M. Cannon, Massachusetts General Hospital; and Dr. Walter Cannon, Harvard Medical School.

Special papers for administrative dietitians on food service and food costs were presented by Marjory Hulsizer, Barnes Hospital; Mary Lindsley, Grace Dodge Hotel; Henry C. Wright, New York; Laura M. Piper, New York; Dr. Leroy E. Parkins, Peter Bent Brigham Hospital; Dr. J. W. Hayes, New York. Emma Gunther and Ray Balderston, Teachers College, told of their work in China and of the possibilities there for dietitians.

The work of the Association during the year was presented at the section sessions. Breta M. Luther and Rose Straka reported a survey on courses for student dietitians in hospitals in the U. S. and Canada having more than 100 beds and an accredited training school for nurses, and a survey of courses in dietetics for student nurses in 20 selected institutions. Dr. Ruth Wheeler discussed

the findings of these reports as they bear on the organization and management of a dietary department. Octavia Hall presented a survey of food costs per capita in 50 selected institutions. Gertrude Gates Mudge presented the report of an intensive survey of Italian dietaries in New York, Boston, Detroit, and Memphis.

At the dinner meeting the Association had as its distinguished speakers Surgeon-General Ireland, U. S. Army; Asst. Surgeon-General Smith, U. S. Public Health; Major Stimson, Army Nurse Corps; Miss Noyes, A. R. C.; Miss Minnegerode, U. S. Public Health; Mrs. Corsette and Colonel Whitledge, Veterans Bureau.

Mrs. John D. Rockefeller, Jr., entertained the Association and Washington guests at tea at the Grace Dodge Hotel. The entire meeting was characterized by the keenest interest and enthusiasm and indicates a future of work useful to the profession, on behalf of this vigorous young organization.

American Child Hygiene Association. A program of much interest to all Home Economics administrators, teachers, and students was presented at the Thirteenth Annual Meeting of the American Child Hygiene Association in Washington on October 12th to 14th.

As an indication of the increased recognition of nutrition as a factor in all phases of health work today it is very gratifying to find that the topic for discussion of the first morning of the meeting was The Training in Nutrition Needed for Child Hygiene Workers. Dr. Alice Blood presided at this session.

The program was as follows: Some of the Problems in Training Nutrition Workers, Flora Rose; Nutrition Training for General Field Workers, Edna White; Training Needed by Nutrition Workers for Public School Service, Emma Dolfinger; Discussion, Margaret Sawyer and Katherine Pritchett.

Summary of the main points in papers and discussions:

1. The training of nutrition workers as a problem really exists. Our training schools have given a fundamental knowledge of nutrition, but have failed to give a knowledge of nutrition which functions.

2. A functioning knowledge of nutrition should include ability in and knowledge of administration and organization of community resources.

3. It is desirable to give instruction in nutrition to public health nurses and social workers. Such field workers require, however, the supervision of a more highly trained specialist in nutrition.

4. We must give a clear idea of feeding a *normal* child, especially to the nursing profession.

5. A nutrition class should not be conducted as a clinic. It should be a beacon light to show the way to health for everyone.

6. Before we can give nutrition to the community and to the school we must educate our educators as to the meaning and value of nutrition work.

The Home Economics Section of the Association of Land-Grant Colleges, with Louise Stanley as Chairman, met in Washington the week of November twentieth to discuss administrative problems. A report will appear in the next number of the *JOURNAL*.

The General Federation of Women's Clubs has established permanent headquarters at 1734 N. St. N. W., Washington, D. C.

American Association of University Women. Ruth Hawthorne French has been elected to succeed Mrs. Martin as Executive Secretary. R. Louise Fitch has been appointed to direct the membership campaign. Miss French and Miss Fitch have established offices at association headquarters in Washington.

Women's Foundation for Health. The delegates from the American Home Economics Association to the House of Dele-

gates of the Women's Foundation for Health, New York City, November 21 and 22, were Mrs. Mary Swartz Rose, Teachers College, Columbia University, Secretary; Elizabeth Condit, Pratt Institute; Annie Macleod, Vassar College; Mrs. J. B. Short, President of the Home Economics Association of Greater New York.

The Executive Secretary. The announcement of Miss Sweeny's acceptance of the Executive Secretaryship is made in the editorial pages of this issue of the *JOURNAL*. Miss Sweeny has already made tentative plans for meetings with all the unaffiliated states, and has completed her November itinerary as follows:

November 4, Detroit: Conference with Miss White regarding the program of the mid-year meeting.

November 6, East Lansing: Addressed the Women's Club.

Conference with Miss Gettemy, President Michigan Home Economics Association.

November 8 and 9, Milwaukee: Addressed the Teacher's Institute at the invitation of Miss Babcock, City Supervisor of Home Economics.

Addressed the students at Milwaukee-Dowder College at the invitation of Miss West, Director of Home Economics.

Conference with the Council of the Wisconsin Home Economics Association.

Addressed the Home Economics Section of the Wisconsin Teachers Association.

November 10, Chicago: Conference with Dr. Blunt and Program Committee regarding annual meeting.

November 11, Ames: Conference with Iowa Home Economics Association regarding the completion of affiliation and plans for work.

November 14-15, Manhattan: Conference with the Kansas Home Economics Association.

November 16-17, Kansas City, Missouri: Conference with the Executive Committee of the Missouri Home Economics Association.

November 20-22, Washington: Meeting of the Association of Land-Grant Colleges.

November 28, Syracuse: Addressed the New York Home Economics Association.

November 30, Detroit: Mid-year meeting of the American Home Economics Association.

College Entrance Credits in Commercial Subjects. In consideration of the increasing number of students in commercial classes in secondary schools, and of the increasing demands of industry and commerce for better trained personnel, the committee, appointed at the second Commercial Education Dinner Conference held by the United States Bureau of Education in conjunction with the Vocational Education Association of the Middle West, recommended to that association, for endorsement, the following:

1. A declaration of policy which will best encourage and enable students to continue in higher institutions their preparation for business, thus assuring to industry and commerce a constant and adequate supply of efficient personnel, trained in particular for supervisory and management positions; and to this end that secondary schools and colleges and universities, working jointly through customary agencies, effect such a revision and articulation of secondary commercial education with higher education as will achieve this object.

2. That the commercial course in secondary schools include the three following sequences: English, social sciences, and mathematics and science (commercial geography may be offered as a part of the mathematics-science sequence if not presented in the social science group); that a minimum of three units be offered in each of these sequences.

Note: One unit of business English may be offered in the English sequence. One unit in United States history and civics shall be included in the social science sequence. Social science may include: industrial history, commercial geography, commercial law, salesmanship, and economics. One unit in commercial arithmetic may be offered in the mathematics-science sequence.

3. And further, that whenever elected at least two units must be taken in any one of

the following technique groups: (a) accounting, (b) secretarial, (c) merchandising.

The Association to Promote Proper Housing for Girls, through its Bureau of Rooming and Boarding Houses, refuses to recommend any girl under twenty-five years of age to a house which does not contain a parlor for the reception of guests. Provision of a parlor has been included in the set of standards adopted by the Hostess Club made up of landladies registered with the association.

Other standards adopted for the benefit of both the guest and the hostess determine the rate of rent in regard to location of house, size, position, and furnishings of the room; valuation of property and overhead expenses; method of payment; rates for visiting guests; regulations covering use of electric iron; care of room; and provision of linen, bed covering, and other accessories. The Hostess Club meets once a month to foster coöperation among its members and to keep its standard up to the minute.

A study of living conditions made by the association resulted in the organization of self-governing Girls' Community Clubs in rooming sections of the city. Sunday teas to introduce new members, card evenings, and hiking parties are some of the social activities provided.

Anilin Dyes. The first attempt to standardize American anilin dyes used as stains in bacteriological work was made by the Society of American Bacteriologists. With the assistance of certain dealers in biological stains they have been working on the matter for about a year and find that American manufacturers have met the bacteriologist's needs in an admirable way. The work of the bacteriological society appeared so important that the National Research Council offered to take it over so as to place facilities at the disposal of the worker which were not available to the bacteriological society alone. The work has been organized with the cooperation of the Department of Agriculture and several national scientific societies. The hope of the committee is not only to standardize the stains but to secure the production of biological stains

in this country decidedly better than those available before the war.

ALABAMA

Polytechnic Institute. While the Alabama Polytechnic Institute has been co-educational for many years, it had been more in a nominal way up to the beginning of the 1921-22 session. This year with Miss Harris in the position of Dean of Women and State Home Demonstration Agent, rapid developments in women's work are expected. The training of county home demonstration agents will greatly strengthen the excellent home demonstration work being done in Alabama.

Announcement has been made by Helen Green, Head of the Home Economics Department that, in coöperation with the State Home Economics Association and the Extension Service through the district and county home demonstration agents, definite plans are now under way for the establishment of a uniform course in dress making in the high schools of Alabama.

In addition to making this course uniform in the high schools it will also be carried to the girls in the rural sections by the county home demonstration agents.

At a recent meeting of the State Home Economics Association Miss Green was made chairman of a committee on dress making, and is therefore taking the lead in establishing this course in the high schools.

ARIZONA

University of Arizona. All graduates in home economics last June have secured teaching positions for the present year. All but one accepted positions in the state.

The Home Economics Practice House has secured a two year old boy who has become a member of the house family for the first semester. This child was selected for the purpose of teaching the choice of foods for children, and food habits and discipline.

Conference. Before the public schools of Arizona opened, Kate Bear, Supervisor of Vocational Home Economics, called a con-

ference of home economics teachers for the purpose of outlining the state plans and requirements and stimulating coöperation among the teachers of the state. The response and interest of the teachers insured the success of this conference.

FLORIDA

A Woman's Conference was held at Florida State College for Women, September 4-8. The members of the conference were home demonstration agents, state board of directors of the Woman's Club, and other home economics workers.

The Omicron Nu fraternity was installed at Florida State College for Women on May 4 with an active membership of seven.

IDAHO

University of Idaho. The vacancies caused by the resignation of Zella E. Bigelow, Associate Professor of Clothing, Hallie E. Hyde, Associate Professor of Foods, and Janet Scott, Supervisor of Practice Teaching, were filled by the appointment of Ruth Patchin, Montana Clothing Specialist; Ramona A. Pease, Columbia University; and Florence Sly, University of Minnesota.

INDIANA

Home Economics Extension. A revelation of what a county can do without the help of a home demonstration agent was illustrated by the exhibit made at a recent County Product Show in Noble County. The women of this county, which has twelve townships, undertook to show what each township was doing with its local organization and occasional visits from extension specialists.

Each township put on an exhibit, which was judged by the following score card: Education value, 25; quality 25; arrangement 25; appropriateness 25.

Some of the titles may prove suggestive: *Practical Nursery*—a home nursery, with inexpensive yet complete equipment. Demonstrations on the care of the child. *The*

Thrashing Dinner—a table set with a meal, which would be satisfying and easily prepared and served. Suggestions for typical meals. *The Ideal Sewing Room*—necessary equipment; demonstration. *The School Child*—exhibits of well planned lunches, contrasted with unsuitable ones. Appropriate school garments contrasted with unsuitable ones. Ways in which a school child may help mother. *In the Kitchen*—suggestions for making the *Meal in the Kitchen* attractive.

The Exhibit at the Indiana State Fair, Indianapolis, September 4-9, featured clothing projects. The homemade dress form and its use were emphasized. An exhibit which attracted much attention was a ready-made dress, its sale price attached, and a homemade dress, copied from it, using the same materials, and effecting a saving of forty dollars.

As a result of the forty-eight two-day millinery classes that have been held in the past year, numbers of hats made at these schools were displayed, with posters showing the cost.

The home economics extension service also cooperated with the dairy division in the milk project, and with the horticulture representatives in the beautifying of home grounds program.

New workers in home economics extension are Madeline Connor, Foods Specialist; Neva Stephenson, Girl's Club Leader; Aneta Beedle, Assistant, to cooperate with the milk demonstration work of the dairy department.

Purdue University. The first meeting of the Home Economics Club at Purdue University was well attended. The group is enthusiastic over the prospect of the year's work in the New Home Economics Building. Professor Mary L. Matthews talked on the "Opportunities in Home Economics." Each member of the home economics faculty was introduced.

New members of the staff are Katharine McFarland, instructor in Institution Administration and Foods, and Marie Schress, assistant in Clothing and Textiles.

Since September, 1921, Indiana has been devoting part of her Experiment Fund to research work in home economics. The personnel of this new department is made up of Mr. G. I. Christie, Director of Agricultural Experiment Station, Professor Mary L. Matthews, Chief of Department of Home Economics in the Experiment Station, and Ruth Jordan, Assistant in the Department of Home Economics in the Experiment Station. In most colleges members of the teaching staff of the department are too busy to carry on investigation or research except in a very limited way. Just as the practical farmer looks to the Experiment Station workers for help in solving his problems, so the practical housewife should have some place to which she might look for assistance. During the short existence of this department it has solved dozens of problems for Indiana women.

IOWA

Iowa State College. Ten members of the Home Economics Division attended the convention at Corvallis.

Twelve weeks unit courses are being offered for homemakers this year. They include foods, nutrition, clothing, and household management.

Dr. Mary Sheldon has been added to the hospital staff to assist in caring for the health of the college women. Every freshman is given a thorough physical examination and attention is provided for those who need special diet or corrective gymnastics. A strong, constructive health program is under way.

The number of women registered this fall is about 1050. An informational test in home economics was given every freshman student registered in the Home Economics Division in addition to the regular intelligence tests which have been given at the beginning of each year for several years.

The sorority houses are benefiting by the centralized buying plan which has been started under the direction of the Stewards Club.

KENTUCKY

The Kentucky Home Economics Association held its annual meeting October 13-14 at Louisville, Maybelle Cornell, president, presiding.

A session was given over to each of the following departments: Extension, Home-making, Health, Teaching, Institutional.

Some of the general subjects discussed were The Health Program, The Bureau of Child Hygiene, Boys' and Girls' Club Work.

There was a large attendance, and over twenty new members were added to the association.

MICHIGAN

Nutrition Classes. In September, 1921, nutrition work was started in Michigan City under the direction of Pearl Henderson. The Women's Study Club of the city sponsored and financed the work for the year in eight public and three parochial schools. Prior to this time there had been no intensive health work carried on among the children and their parents, and there were no public agencies which had given medical relief of a constructive nature.

The nutrition worker made a survey of the children in all of the schools with the following results:

Public Schools

	Girls	Boys
Total number weighed.....	1178	1214
Total number 7 per cent or more under weight for age or height.....	638	647
Percentage under weight.....	54.1	53.2

Parochial Schools

Total number weighed.....	635	598
Total number 7 per cent or more under weight for age or height.....	375	351
Percentage under weight.....	59.0	58.7

Total number children, 4-17 years, weighed and measured, was 3625, the total number 7 per cent or more underweight was 2011, showing 55 per cent of the children in the schools to be so undernourished that they should have special attention and care.

Nutrition classes were organized in different schools as quickly as possible, though the worker had only volunteer assistance in the making of charts. The children were measured every four weeks and weighed each week at a regular time. The class met for 15 or 20 minutes per week for instruction in food and health habits.

The physical examinations of the 290 boys and girls in the nutrition classes showed the following histories:

- Insufficient rest, 63.4 per cent
- Closed windows in sleeping rooms, 32.4 per cent
- Insufficient vegetables, 50.6 per cent
- Insufficient fruits, 49.6 per cent
- Insufficient cereals, 47.5 per cent
- Coffee or tea drinkers, 82.7 per cent
- Do not clean teeth, 36.8 per cent
- Diseased tonsils or adenoids, 33.8 per cent
- Decayed teeth, 65.3 per cent
- Defective vision, 33 per cent

The habits of the nutrition class pupils are typical of the 55 per cent who were undernourished.

After nine months the children showed a gain in height of 117.7 per cent and 108.5 per cent in weight. A group of ten pupils in the nutrition classes who were defect-free or had defects corrected early in the fall made a gain of 141.67 per cent in height and 249.1 per cent in weight.

A reweighing and remeasuring of the 3625 boys and girls showed the public schools to have made a higher percentage gain than the parochial. In the parochial schools, 1061 boys and girls who were weighed in September and again in June, made an average gain of 117.3 per cent in height and 95 per cent in weight. In the public schools, 2048 who were weighed in September and again in June, made an average gain of 114.8 per cent in height and 108.1 per cent in weight. In the public schools the hours are shorter than in the parochial, because the church instruction is omitted. The public schools are more modern and have better ventilating and heating systems. There was some physical training included in the program.

Throughout the year meetings were held in the schools for parents of undernourished children. The majority of the 250 who attended these meetings were the parents of public school children. There is a great need for more health work among the parochial and public schools. It has been very evident during the year that the correcting of undernourishment requires a closer coöperation between the dietitians and physicians.

MISSOURI

University of Missouri. There was a conference of the vocational teachers of home economics held in connection with Junior Farmers Week at Columbia, November 2-4. This was widely attended by teachers from all parts of the state.

In order to help provide the various county fairs with competent judges, the department of home economics has compiled a list of trained women who can give some time to attending the fairs and judging products. When requests for assistance come to the University, addresses of the women living in or near the county are sent to the Fair Board. The scheme has worked well for three years.

The State Home Economics Conference of Missouri met in Kansas City November 15-18, in connection with the State Teachers Association. The president of this section is Ella Groenewold of Warrensburg State Teachers College, and the Secretary is Clare White, supervisor of home economics for the state.

NEBRASKA

High School Dormitory. There are a number of county high schools in Nebraska, in which the housing of non-resident students is a growing problem. To meet this situation, the patrons of Rock County have erected a girls' dormitory, providing rooms for approximately twenty-five students. Unfurnished rooms with light and heat are available, rent free, to non-resident students of the county. A matron is in charge, and board is furnished at cost. The plan of having the home economics laboratories

in the girls dormitory, with the food classes taking a large responsibility in the planning and preparation of meals, is believed to be a practical one. The Home Economics Section of the State Board for Vocational Education, coöperating with the Agricultural Engineering Extension Department, is working out tentative plans for such buildings.

Nebraska Wesleyan University. By a coöperative arrangement with the public schools of University Place, the University has started a course in home management practice in the Domestic Arts Home belonging to the public schools. A group of three senior college students, with Lemo Dennis of the Wesleyan faculty, live three weeks in the Home, taking full charge for this period. The family provided for by these girls consists of their instructor, Miss Dennis, the two home economics instructors in the University Place High School, Miss Fortna and Mrs. Fuller, and Mrs. Fuller's son who is 14 years old.

The State Educational Association held its fall district meetings in the six districts of the state, October 12-14. At each of these meetings the new state home economics association held section meetings.

The University of Nebraska has 237 girls specializing in its course in home economics and 55 others electing one or more home economics courses. 58 senior girls will be graduating from the department this year to become teachers, commercial workers, institutional managers, extension workers, and dietitians.

Eleven graduates of the University of Nebraska attended the American Home Economics Association meeting at Corvallis.

Anna Dee and Lydia Swanson, seniors in the Home Economics Department, are spending the first term of this year at the Merrill Palmer school in Detroit taking courses in Child Care and Management.

The Home Management House has a two year old boy in its family circle. Last year the girls took a six months old girl to care for. They hope this year to get experience in the training of the child in addition to the problem of physical care which they had last year.

New members of the home economics staff are Ruth Staples, in charge of home management courses, and Myrtle Easley, millinery specialist with the Home Economics Extension Service.

NEW ENGLAND

The New England Home Economics Association held its first fall meeting at Massachusetts Agricultural College, Amherst, October 14, 1922. A report of the American Home Economics Association meeting at Corvallis, and a paper on Flower Arrangement by Professor Clark Thayer, were followed by a tour of the campus and a luncheon arranged by Lucile W. Reynolds. The Contribution of Economics to Home Economics by Lorian P. Jefferson, Assistant Research Professor in Agricultural Economics, and The Contribution of Sociology to Home Economics by President Kenyon L. Butterfield, formed the afternoon program.

The Social Service Section met October 28 at Girls' City Club, Boston. This was a get-together meeting with exhibition of poster material for social service workers.

Eastern States Exposition at Springfield. This year, in addition to the six boys and six girls representing the club teams of each of the ten Eastern States, three boys and three girls came from Maryland, West Virginia, and Virginia. These teams demonstrated their projects in homemaking and agriculture. May B. Van Arsdale and Mary I. Barber of the Foods and Cookery Department of Teachers College attended the exposition as members of the Advisory Board of Camp Vail.

Vacation Canning Classes. The Public Schools in Boston are opening their doors more and more each year to the children who must spend the two long summer months of the school vacation in the city, for in the city means largely in the streets. Classes are held where children who are behind in their work may review their studies for the next winter. Play grounds are kept open and sufficient and competent teachers provided to keep the children happy and busy with athletics, games, dramatics,

and story telling. In addition to these activities special project classes are opened in gardening, canning, basketry, furniture repair, toy-making, and sewing. The work is wholly voluntary, each child choosing his own project and working at it as many mornings a week as he wishes, and the limited time and space allow.

From one family three children, two girls and a boy, came two mornings a week for six weeks to canning class. Their father had a garden. Those three children canned eighty quarts of fruits and vegetables.

For canning classes of about fifteen children, one teacher is provided. Where more children crowd in, sometimes twenty-five or thirty a day, two teachers are provided. The children bring whatever they wish to can, being guided in choice by the teacher. They may bring jars and rubbers from home or buy them at the kitchen. Some of the teachers buy fruits or vegetables at wholesale for the children. The equipment is simple, most of it being found in any school kitchen. By sorting out the necessary summer utensils from the rest of the kitchen equipment and using these alone, the equipment can be returned easily and if necessary replenished at the end of the season. One kitchen was opened for the first time in the summer of 1921, the initial cost to the city being the price of two boilers, racks, and tongs. The necessary kitchen equipment such as knives, saucepans, etc., was taken from the homemaking department of the school and returned at the close of the summer. About \$2.00 was spent to replenish this equipment and three dollars for running expenses. The kitchen was kept open three days a week, two teachers being on duty for six hours each day. The city paid for the services of the teachers and a janitor, and for gas and water. Forty children attended regularly twice a week and twenty more enrolled for brief periods. Six hundred quarts of fruits and vegetables were canned in that kitchen, about sixty per cent of the products coming from the gardens of the neighborhood. The work was in charge of Lucy H. Nash,

NEW YORK

The New York State Home Economics Association met in Syracuse, November 27-28. A report of the meeting will appear in the January JOURNAL.

The Home Economics Association of Greater New York held the first meeting of the year at Teachers College, October 25, after a dinner served by the Foods and Cookery Department. Mrs. Jenoise Brown Short, president, presided. Marie Sellers reported the Corvallis meeting, and Emma Gunther and L. Ray Balderston told of their experiences in China.

Home Economics Exhibit. The Home Economics Association of Greater New York conducted a booth at the First Annual Exhibit of Women's Activities held under the auspices of The Business and Professional Women's League, at the Hotel Commodore, New York City, September 18-23. One of the objects of this exhibition was to present to young women the various activities which are open to them. The committee felt it advisable to present a different phase of home economics work each afternoon and evening of the show and a program was arranged accordingly. This program was announced on a large card, and visitors gained some idea of the field covered during the week.

On Monday afternoon, Mrs. Jenoise B. Short, President of the Home Economics Association of Greater New York, talked on home economics journalism. In the evening Matilda McKeown of the New York Public Schools and Elizabeth Condit of Pratt Institute illustrated the financial end of housekeeping by the use of budgets. Tuesday afternoon, Mrs. Henrietta Dursee Robinson discussed homemaking as a profession, and in the evening Miss Diehl and Miss Rogers of Pratt Institute discussed practical courses in homemaking.

Wednesday was devoted to the activities of home economics women in hospitals, and interesting exhibits were arranged. Miss Howard, dietitian of Bellevue Hospital, described the administrative work of a dietitian in a large institution; Miss Lautz,

dietitian of Presbyterian Hospital, emphasized the specialized work of dietitians in dieto-therapy, and showed several special trays and the equipment for weighing foods accurately.

Miss Fisher of the Department of Household and Institutional Administration, Teachers College, had charge of the program for Thursday. In the afternoon Mrs. Shafer of the National Bank of Commerce and Miss Knight of Newark discussed the work of feeding large groups in business institutions and schools. In the evening, Miss Fisher outlined some typical positions that are open to women in the management of large group living activities and discussed some of the more recent developments in specialized work for women.

Friday afternoon, Miss Bowman and Miss Lyon, Pratt Institute, outlined courses of training and types of positions open to women in the field of dressmaking, textiles, and millinery. Dolls were shown dressed in interesting period styles. Friday evening, Miss Gillett of the Association for Improving the Condition of the Poor told of the activities of nutrition workers in the home and schools. Charts and other material were shown.

On Saturday afternoon, Miss Holloway, Pratt Institute, discussed courses in foods and cookery for the home and institution. In the evening a marketing exhibit was arranged, under the supervision of Miss Van Arsdale, by Miss Parish and Miss Yackey of the Department of Foods and Cookery of Teachers College. Various commercial brands of food in small and large packages were shown and their prices compared to convey the idea that it pays for food buyers to accustom themselves to a knowledge of weights given on labels, and the price paid per actual ounce or pound. Mimeographed material was distributed, giving practical suggestions for wise marketing.

It was the consensus of opinion among those in charge that the exhibit had been of considerable value in educating the public as to the scope of home economics work.

Plans for the entire demonstration were in charge of Mary Pascoe Huddeson.

The Second Annual Summer Session for State Home Economics Teachers, held at Buffalo Normal School, was planned to meet the needs of two distinct groups of teachers; first, those who already were qualified as teachers in home economics but desired further improvement in methods and up-to-date subject matter; second, those who were not fully qualified but in need of both subject matter and professional courses. The majority of the 105 students enrolled were in the second group.

Of the thirteen members composing the faculty, four were from the regular faculty of the Buffalo teacher training center, four from outside of the state, and the remainder from other institutions and schools in the state. Treva Kauffman, State Supervisor of Home Economics, was director of the session.

The following courses were given:

1. Professional courses: organization and teaching of homemaking in the evening school, correlation of English with homemaking for the foreign-born woman, project method of teaching, principles and problems of part-time education, teaching general subjects in part-time schools, homemaking in the part-time school, the organization and conduct of state aided courses in homemaking and their relation to the community, the methods of teaching nutrition in the school.

2. Subject matter courses: economics, educational sociology, household science, clothing and design, home decoration, home management, food study, the school lunch problem.

Practice classes were conducted in connection with several of the courses. A voluntary class of high school girls met twice a week at Kenmore, the regular practice center in connection with the winter session. This class was used for demonstrating both the class and home project method. A practice class of 25 women from the county Home Bureau was used in connection with the evening school class. A group of eight Italian women at Mt. Carmel Guild was used as a practice class in teaching

the correlation of English and homemaking. Each student enrolled in the course was responsible for one lesson. The group of Italian women became so interested that a teacher was secured to carry on the work after the course closed at the Normal School.

Nutrition classes were organized in Buffalo Public Schools and Memorial Chapel Settlement as part of the course offered in the organization of nutrition work in the public schools.

In developing the part time education classes, arrangements were made with several commercial and industrial establishments for occupational study. A round table conference was held with several employment managers.

The cafeteria was used as a laboratory for the lunch room course. From 300 to 400 people were served daily. Cafeteria service was maintained for the students, and dining room service for the faculty.

The practice house was occupied and used as a laboratory for the home management group.

Special lectures of both general and specific interest were held each afternoon at 3 o'clock.

A Household Science Exhibit was arranged, and electrical appliances of interest to the homemaker were displayed and demonstrated. Fifteen firms cooperated and \$2300 worth of equipment was loaned for the exhibit.

Health in the Home. The Home Economics Association of Greater New York assumed the responsibility of arranging and presiding over two booths which were taken by the American Home Economics Association, at the Public Health Exhibition, held at the Twenty-Third Regiment Armory, Brooklyn, N. Y., Oct. 7-14, 1922.

Mrs. Margaret Loring Thomas, chairman of the committee, was assisted by Elizabeth Condit, Lucy Gillett and Grace MacLeod.

A collection of primitive cooking utensils, used by American Indians, loaned by the American Museum of Natural History, formed an interesting historical background for the educational side of the exhibit. It incidentally proved a very effective way of getting in touch with small boys and men.

Conversation about "things the Indians cooked in" could very quickly be turned to "things good for boys and girls to eat." The latter were very strikingly illustrated by posters made by the pupils of the Public Schools of Brooklyn and New York, hung on the wall back of the Indian utensils.

A kitchen cabinet with an outfit of modern utensils aroused the interest of housekeepers. A model breakfast, dinner, and supper for a twelve year old girl, also loaned by the American Museum of Natural History, set on a small serving table near the cabinet, appealed to the spectator from another point of view. The composition of the foods served in the model meals was illustrated by vari-colored blocks of wood.

Dr. Langworthy's charts and a collection of Government Bulletins held the attention of the intelligent passer-by. A number of men evidently heads of families, asked to have copies of some of the bulletins obtained for them.

Fifty-two lantern slides were automatically displayed, in rotation, in a stereomograph, loaned by the Department of Health. The slides were selected from among those owned by the Department of Health and the Museum of Natural History. "Health in the Home" was the feature of this part of the exhibit. Many of the slides were attractively colored, some showed children eating, going to school, and being weighed; others showed clean cows and good milk supply; others the composition, food value, and cost of foods. Dr. Mendell's rats appeared in the slides as graphically as ever.

There was a hostess for every day, each one emphasizing her personal reaction. Mrs. Jenoise B. Short, President of the Home Economics Association of Greater New York, represented Home Economics in journalism; Mrs. Thomas, the importance of home economics training for the homemaker; Elizabeth Condit, of Pratt Institute made a plea for the study of home economics through literature and the greater use of libraries; Alma J. Finlayson, President of the Association of Home Economics Teachers of the New York City Elementary Schools, explained the work done in the Public Schools; Day Monroe and students

from Teachers College were present to give the latest news of the progress being made in nutrition and public health work.

Over 50,000 people attended the exhibit.

OHIO

The Ohio Home Economics Association held the October meeting in Dayton, October 7. The topic for discussion was "Scientific Feeding of the Public." Bertha Hyde spoke for the hospital dietitians, Helen Sawyer for the managers of tea rooms, and Agnes Ludman told of the possibilities of the school lunch. Mr. John Willy, Editor of the Hotel Monthly told of the activities of trade journals in the interest of nutrition.

The December meeting will be held in Columbus, December 27. The subject will be Art in Home Economics.

Ohio State University. A course called Child Care is to be offered to senior students in home economics. An attempt is being made to include, not only the physical care of the child, but also a study of his mental characteristics and development, his place in the family, and the responsibility of society for the child. Obviously, with so inclusive an outline, the subject must be treated in survey style to give viewpoint rather than a mass of detail. The course will be taught by various specialists. Interesting plans are being developed for observation and experience.

TEXAS

College of Industrial Arts. The completion of ten rooms in the Household Arts Building, for the use of students in the department, establishes a milepost of progress and indicates the lines along which Texas is developing education for women.

Two new foods laboratories and a third dining room for meal service relieve the present laboratories, of which there are four devoted to food work. The new dining room permits of increase in lessons in actual meal service. The new laboratories, in addition to providing for more classes are so equipped as to provide enlarged opportunities in many directions. The meal

service laboratory equipment includes a steam table and especially constructed cupboards and tables. The other food laboratory is equipped with four unit kitchens and has many special features planned by the faculty of the department.

A drying room has been installed for wet towels. Each instructor will regulate the supply for her classes. Additional storage room has been provided to relieve congestion. A reception room has been furnished for use in connection with the dining rooms.

There are three new laboratories and a work room for students in domestic art. Built-in lockers and large closets are features of the millinery laboratories. Power machines for advanced classes in clothing, and other up-to-date appliances afford opportunity for work of high grade.

NOTES

Dorothy Arnold, Instructor in Applied Art, University of Missouri, has been given a leave of absence for special study.

Virginia Bauer, who has been instructor at the University of Chicago for the last year has been elected instructor in the University of Missouri.

Zella E. Bigelow, who in June resigned per position as Associate Professor of Clothing, University of Idaho, was married August 30, to Dr. Thompson, a member of the Law Faculty of the University of Macon, Georgia.

Ida Carr who assisted in vocational work in Nebraska last year was married this summer to Mr. N. L. Tyson.

Eloise Davison has resigned as Household Management Specialist at Ohio State University to accept a position in the Home Economics Department at Iowa State College.

Marie Fuller is head of the home economics work at Pine Manor, Mass.

Agnes Ellen Harris, formerly Field Agent in the States Relations Service, U. S. Department of Agriculture, is now Dean of Women at the Alabama Polytechnic Institute and State Home Demonstration Agent.

Rachel Harris, millinery specialist with the Home Economics Extension Service in

Nebraska, was married this summer to Mr. Robert Cunningham of Janesville, Wisc.

Hallie E. Hyde, for the past eight years, Associate Professor of Foods, University of Idaho, is spending a year in Honolulu.

Lillian Jeters and **Lemo Dennis** of Nebraska Wesleyan spent the summer in New York attending Teachers College, Columbia.

Lonny Landrum, District Home Demonstration agent of North Florida has accepted the position of Conservation Specialist in South Carolina.

Ellen Lenoir has been appointed as Miss Landrum's successor.

Alice Loomis, who has been State Supervisor since the organization of vocational work in Nebraska, is now giving all of her time to the development of home economics in the part-time and evening schools and to assisting with the development of trade and industrial education in the state.

Hughina McKay who received her Master's Degree last summer at the University of Chicago, has accepted a position on the Home Economics Staff at Ohio State University.

Elizabeth W. Miller of Iowa State College is now Mrs. Koch and is again associated with the Home Economics Department of the University of Chicago.

Margaret Sandels has been appointed acting Dean of Home Economics at Florida State College for Women.

Hannah Stillman, who did graduate work at the University of Missouri last year has been added to the staff as instructor in dietetics.

Miss Tracy has accepted the position of dietitian at Florida State College for Women.

Birdie Vorhees, formerly of Oklahoma A. & M. College, is State Supervisor of Home Economics in the Day Schools in Nebraska.

Mildred Welgley of the University of Minnesota was married to Mr. Henry C. Wood of Phoenix, Arizona.

Bertha Whipple, Assistant Professor of Home Economics, University of Missouri, has been granted a leave of absence to do special work as dietitian in the American Hospital, Stamboul, Constantinople.

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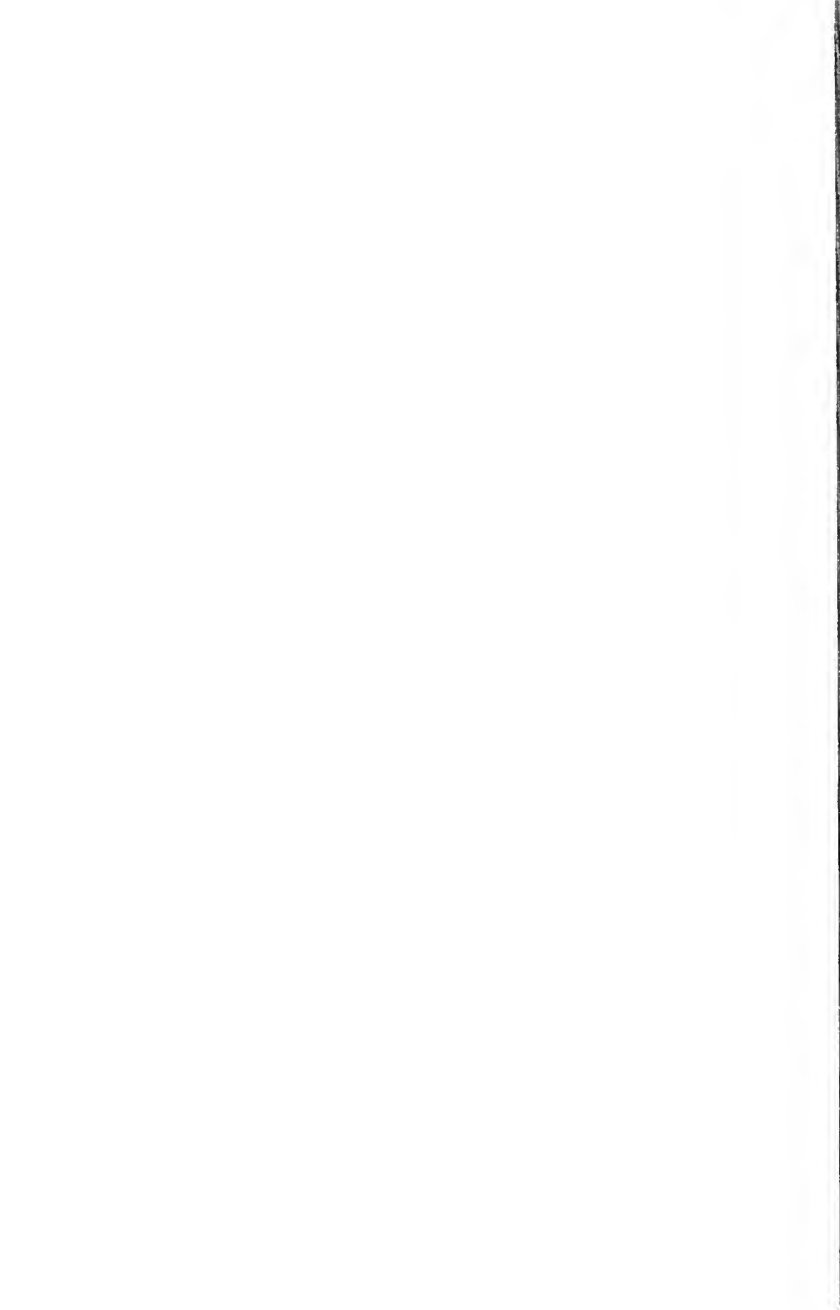
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